



TRAFFIC IMPACT ANALYSIS

COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL

JURISDICTION: CITY OF LYNNWOOD, WA

Prepared for:
Edmonds School District
20420 68th Avenue W
Lynnwood, WA, 98036

Prepared by:
Kimley»Horn

September 2025
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TRAFFIC IMPACT ANALYSIS

FOR

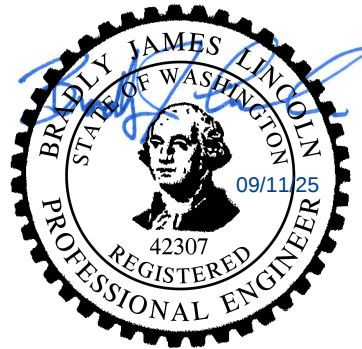
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1. DEVELOPMENT IDENTIFICATION

Kimley-Horn and Associates, Inc. (Kimley-Horn) has been retained to provide a traffic impact analysis for the proposed remodel of College Place Elementary School (CPE) and College Place Middle School (CPM) located at 20401 76th Avenue W and 7501 208th Street SW, respectively. CPE currently occupies 53,590 square feet (SF) and has a capacity for 541 students which will increase to 550 students in 79,054 SF. CPM currently occupies 86,859 SF and has a capacity for 1,053 students which will decrease to 1,004 students in 129,687 SF. There will be an additional 11,096 SF of shared kitchen and maintenance space between the schools. CPE has two access driveways, one connecting to 76th Avenue W and one to 204th Street SW. CPM currently has four access driveways connecting to 208th Street SW. A site vicinity map is shown in **Figure 1** with proposed study intersections identified.

The future site plan consolidates CPE trips to a single access along 208th Street SW and CPM trips to a single access along 204th Street SW. All future bus trips will enter along 208th Street SW and exit along 204th Street SW to 76th Avenue. The future site plan is shown in **Figure 2**.

Brad Lincoln, responsible for this report, is a licensed professional engineer (Civil) in the State of Washington and a member of the Washington State section of Institute of Transportation Engineers (ITE).

2. METHODOLOGY

Trip generation calculations for the CPE and CPM development have been performed according to data contained in the ITE (2021) *Trip Generation Manual*, 11th Edition. The trip generation calculations are based on existing and future capacities. The distribution of trips generated by the site is based on existing counts at the study intersections in the site vicinity and the school boundary. The study intersections identified by the City of Lynnwood (City) have been analyzed for existing and future conditions during the AM and School PM peak hours.

Congestion at intersections and along arterials is generally measured in terms of level of service (LOS). In accordance with *Highway Capacity Manual* (HCM), 7th Edition by the Transportation Research Board, road facilities and intersections are rated between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The level of service at signalized, roundabout, and all-way stop-controlled intersections is based on the average delay of all approaches. The level of service for two-way stop-controlled intersections is based on average delays for the critical stopped approach. Geometric characteristics and conflicting traffic movements are taken into consideration when determining level of service values. A summary of the intersection level of service criteria is included in **Table 1**.

Table 1: Level of Service Criteria for Intersections

Level of ¹ Service	Expected Delay	Intersection Control Delay (Seconds per Vehicle)		
		Roundabouts	Unsignalized Intersections	Signalized Intersections
A	Little/No Delay	≤10	≤10	≤10
B	Short Delays	>10 and ≤20	>10 and ≤15	>10 and ≤20
C	Average Delays	>20 and ≤35	>15 and ≤25	>20 and ≤35
D	Long Delays	>35 and ≤50	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>50 and ≤70	>35 and ≤50	>55 and ≤80
F	Extreme Delays ²	>70	>50	>80

The City has established an acceptable level of service of LOS D for arterials that are not Washington State Department of Transportation (WSDOT) roadways and a LOS C for local streets. The Comprehensive Plan identifies the acceptable threshold along WSDOT roadways as “E-Mitigated.” The analysis has been performed using the *Synchro 12* software.

¹ **Source:** *Highway Capacity Manual 7th Edition*.

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).

LOS B: Generally stable traffic flow conditions.

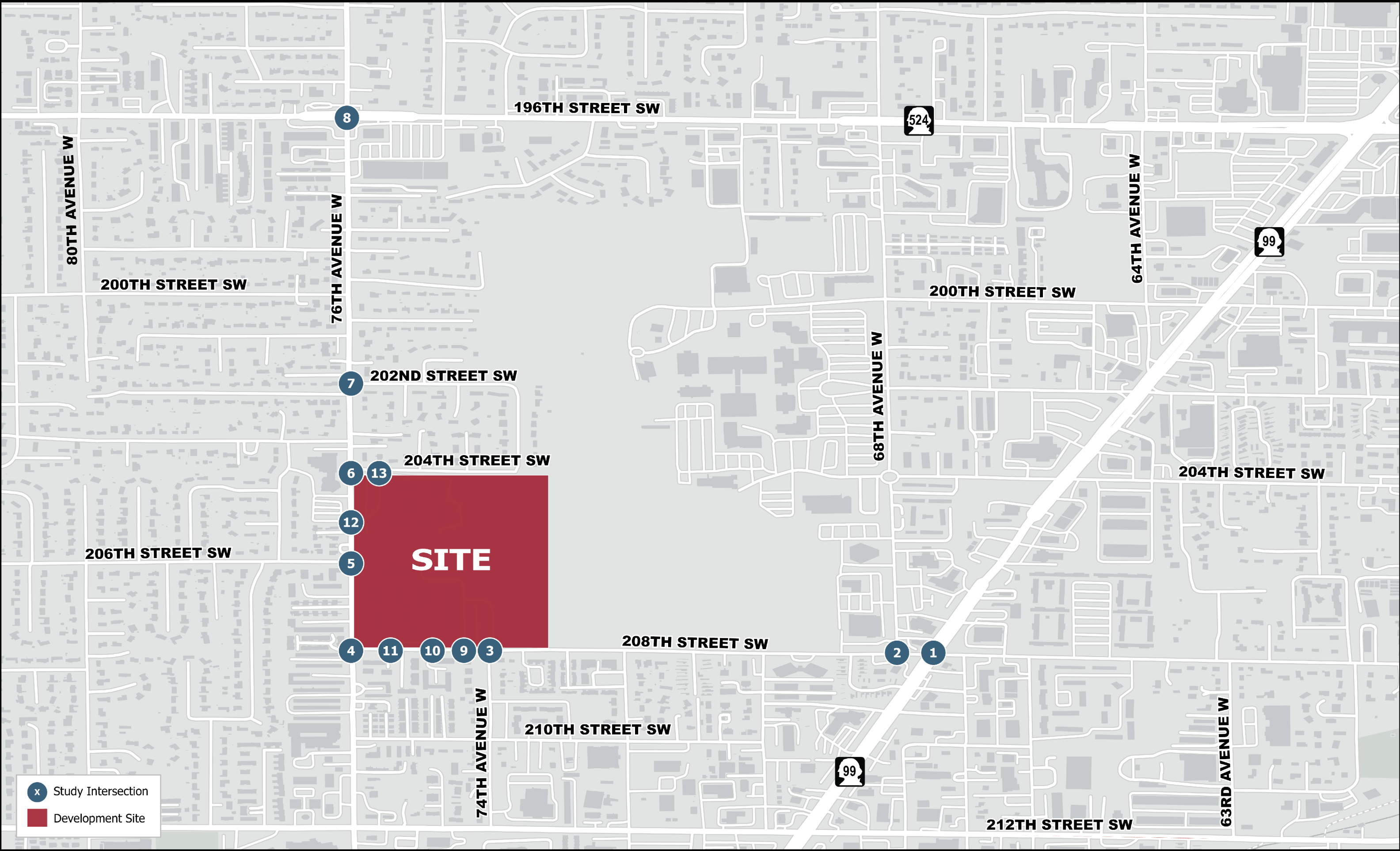
LOS C: Occasional back-ups may develop but delay to vehicles is short term and still tolerable.

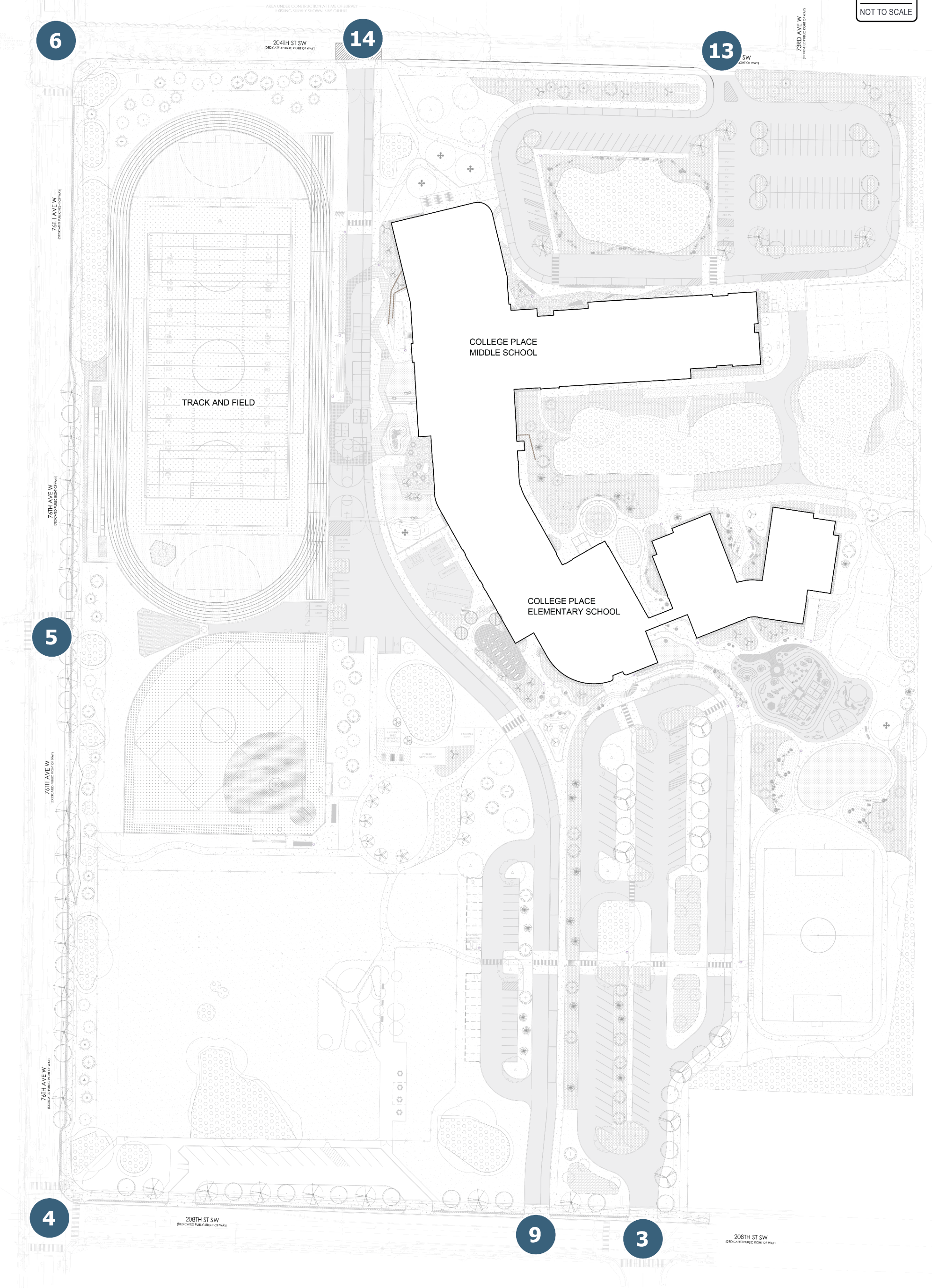
LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e., vehicles delayed one cycle or less at signal).

LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.

LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

² When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.





3. TRIP GENERATION

CPE is proposed to have a 550 total student capacity, which is an increase from the previous 541 student capacity. CPM is proposed to have a 1,004 total student capacity, which is a decrease from the previous 1,053 student capacity. The trip generation calculations have been performed using data published by the ITE (2021) *Trip Generation Manual*, 11th Edition. The average trip generation rates for the following ITE Land Use Codes (LUC) were utilized:

- LUC 520, Elementary School – 550 students (New Capacity)
- LUC 520, Elementary School – 541 students (Current Capacity)
- LUC 522, Middle School – 1,004 students (New Capacity)
- LUC 522, Middle School – 1,053 students (Current Capacity)

The trip generation calculations for the CPE and CPM development showing the difference in students added are summarized in **Table 2**.

Table 2: Trip Generation Summary

Land Use	Size	Average Daily Trips (ADTs)	AM Peak Hour Trips			School PM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total	In	Out	Total
Elementary School ITE LUC 520 (New Capacity)	550 Students	1,249	220	187	407	114	134	248	40	48	88
Elementary School ITE LUC 520 (Old Capacity)	-541 Students	-1,228	-216	-184	-400	-112	-131	-243	-40	-47	-87
Elementary School Total		21	4	3	7	2	3	5	0	1	1
Middle School ITE LUC 522 (New Capacity)	1,004 Students	2,108	363	310	673	166	195	361	72	79	151
Middle School ITE LUC 522 (Old Capacity)	-850 Students	-2,211	-381	-325	-706	-174	-205	-379	-76	-82	-158
Middle School Total		-103	-18	-15	-33	-8	-10	-18	-4	-3	-7
TOTAL		-82	-14	-12	-26	-6	-7	-13	-4	-2	-6

The changes in capacities are anticipated to result in a net decrease in trip generation. The increase in CPE capacity would only account for approximately 21ADTs with approximately 7 AM peak hour trips, 5 School PM peak hour trips, and 1 PM peak hour trip. The decrease in CPM capacity would result in a decrease of 103 ADTs, 33 AM peak hour trips, 18 School PM peak hour trips, and 7 PM peak hour trips. The combined total for the CPE and CPM developments is a

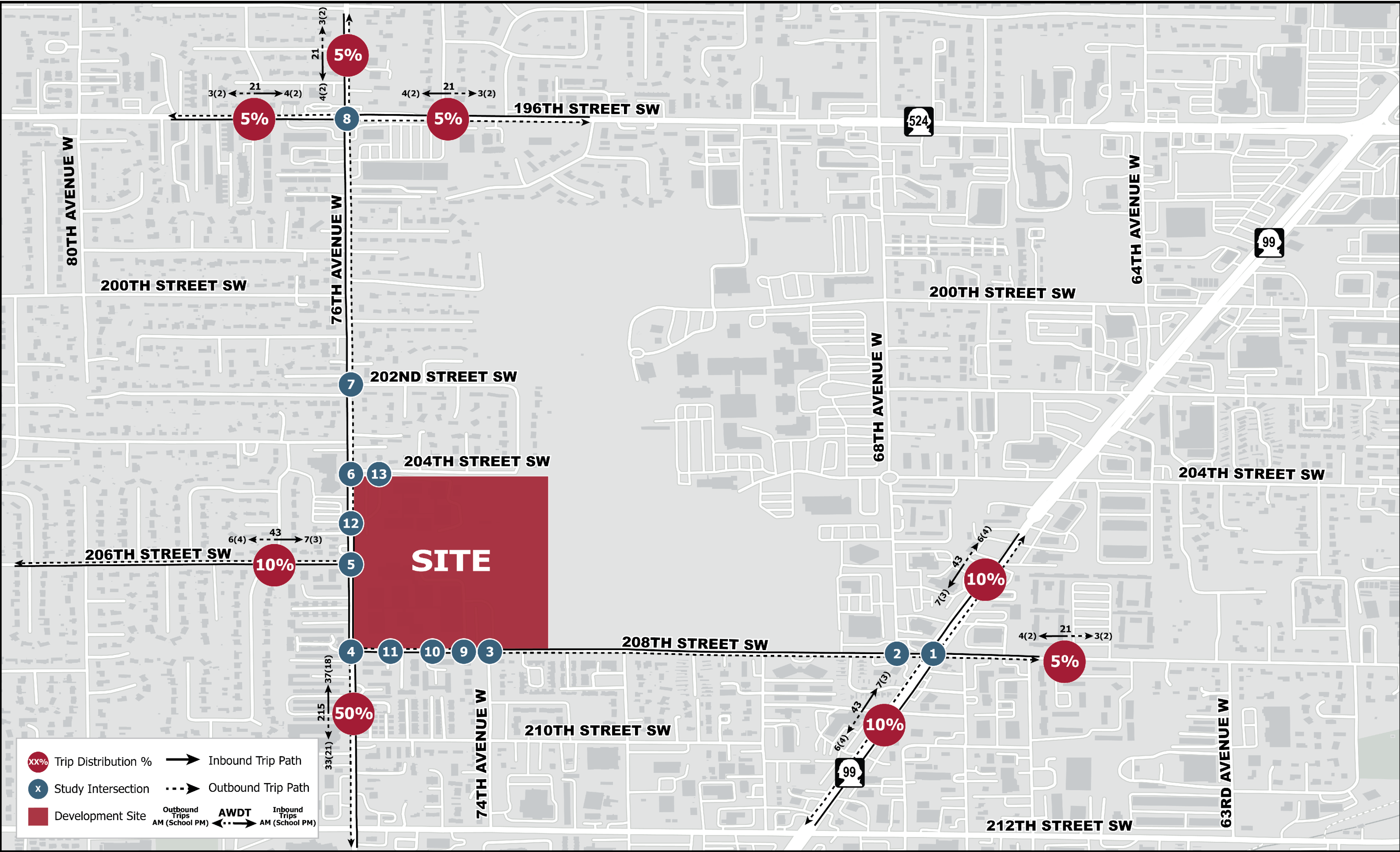
decrease of approximately 82 ADTs, 26 AM peak hour trips, 13 School PM peak hour trips, and 1 PM peak hour trip. The trip generation calculations are provided in **Appendix A**.

4. TRIP DISTRIBUTION

Trip distribution based on existing counts at the study intersection in the site vicinity and the school boundary. The trip distribution is:

- 50% to and from the south along 76th Avenue W.
- 15% to and from the north
 - 10% to and from along 196th Street SW.
 - 5% to and from along 76th Avenue W.
- 25% to and from the east
 - 20% to and from along SR-99.
 - 5% to and from along 208th Street SW.
- 10% to and from the west along 206th Street SW.

The weekday AM and School PM peak hour trip distributions are shown in **Figure 3**.



5. INTERSECTION LEVEL OF SERVICE ANALYSIS

Based on conversations with the City, the following study intersections have been analyzed for the weekday AM and School PM peak hours:

1. Pacific Highway (SR-99) at 208 th Street SW	Signalized
2. 68 th Avenue W at 208 th Street SW	Two-Way Stop-Controlled
3. 74 th Avenue W / East MS Access at 208 th Street SW	Two-Way Stop-Controlled
4. 76 th Avenue W at 208 th Street SW	Signalized
5. 76 th Avenue W at 206 th Street SW	Two-Way Stop-Controlled
6. 76 th Avenue W at 204 th Street SW	Two-Way Stop-Controlled
7. 76 th Avenue W at 202 nd Street SW	Two-Way Stop-Controlled
8. 76 th Avenue W at 196 th Street SW (SR-524)	Signalized
9. East Middle School Exit at 208 th Street SW	Two-Way Stop-Controlled
10. Parking Entrance at 208 th Street SW	Two-Way Stop-Controlled
11. Parking Exit at 208 th Street SW	Two-Way Stop-Controlled
12. 76 th Avenue W at Elementary School Entrance/Church Exit	Two-Way Stop-Controlled
13. Elementary School Exit at 204 th Street SW	Two-Way Stop-Controlled

The 76th Avenue W at 204th Street SW intersection is analyzed as a two-way stop-controlled intersection for the existing conditions. A signal is planned to be constructed at this intersection; therefore, the intersection is analyzed as a signalized intersection with permitted left-turn phasing for the 2028 horizon year for the no-build and build conditions.

The 2028 build conditions re-align CPE and CPM development access to the following intersections:

3. 74 th Avenue W / ES Access at 208 th Street SW	Two-Way Stop-Controlled
9. Bus Spine Road at 208 th Street SW	Two-Way Stop-Controlled
10. Parking Entrance at 208 th Street SW	Two-Way Stop-Controlled
11. Parking Exit at 208 th Street SW	Two-Way Stop-Controlled
13. Middle School Access at 204 th Street SW	Two-Way Stop-Controlled
14. Bus Spine Road at 204 th Street SW	Two-Way Stop-Controlled

5.1. Existing Turning Movement Calculations

The independent count firm Traffic Data Gathering (TDG) collected counts on Thursday, December 5th, 2024. The 2024 existing turning movements are shown in **Figure 4** and **Figure 5**. The existing study intersection count data is provided in **Appendix B**.

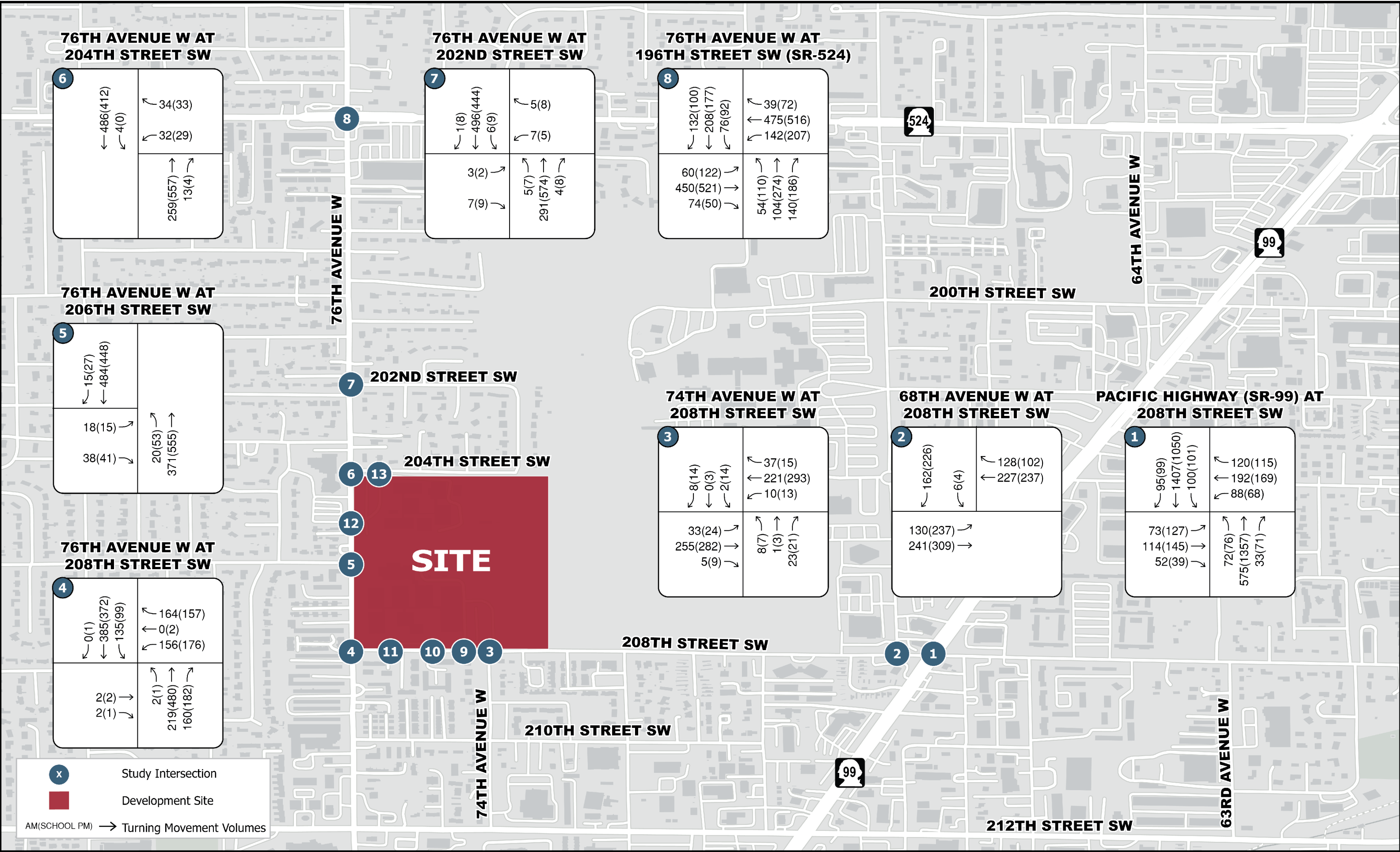


FIGURE 4: STUDY INTERSECTION TURNING MOVEMENTS - EXISTING AM AND SCHOOL PM PEAK-HOUR
COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL - LYNNWOOD, WA (KH 090224097)

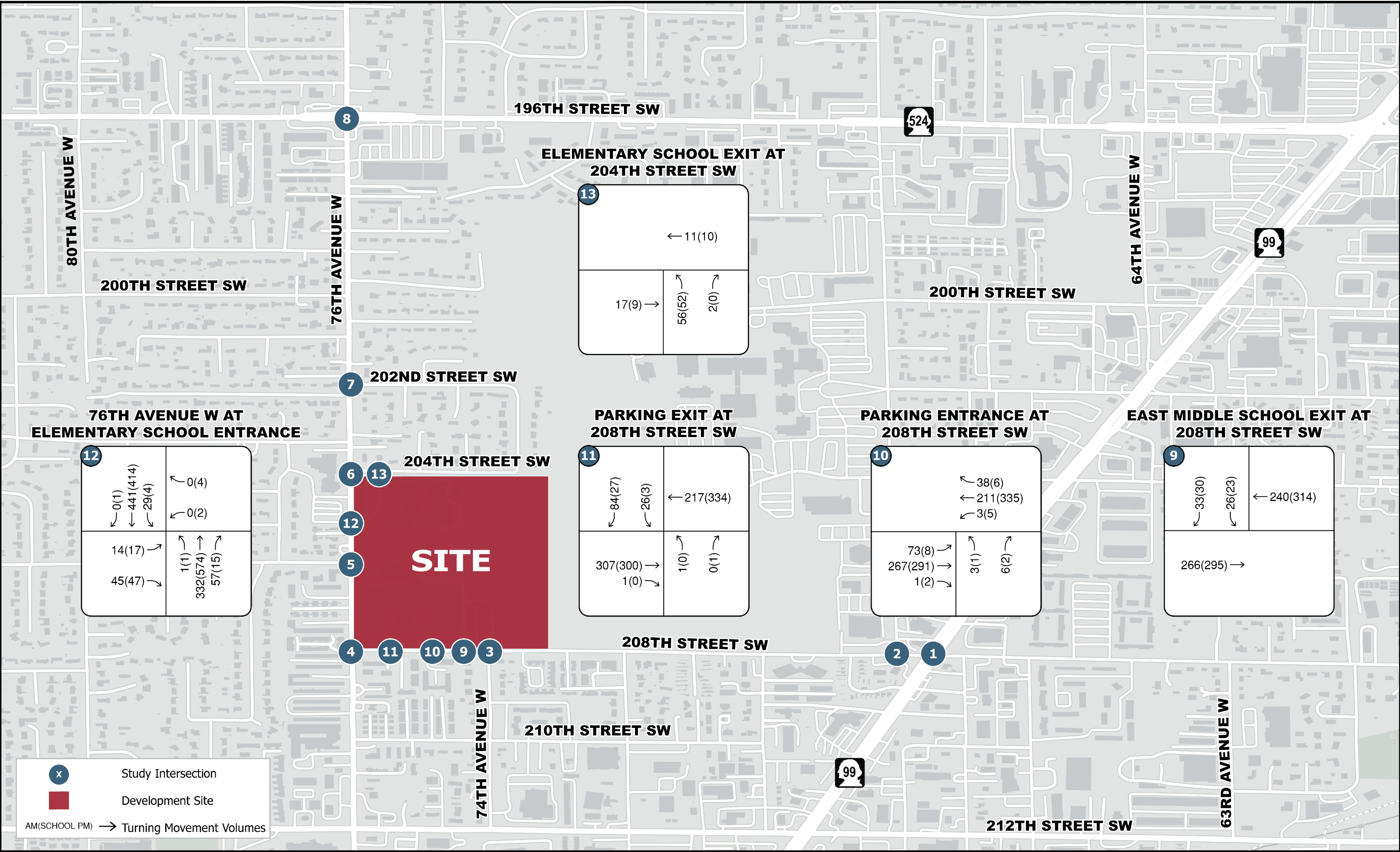


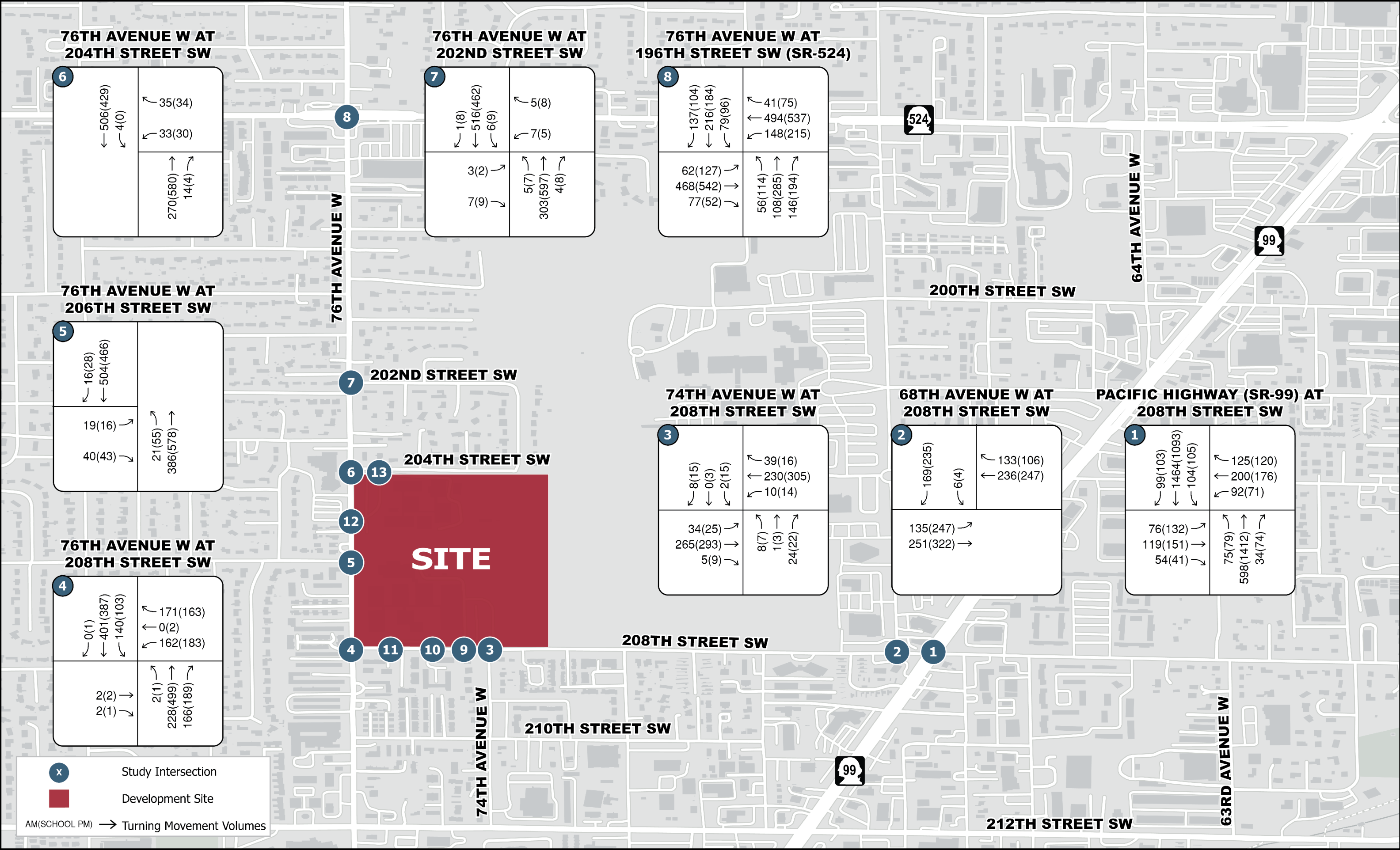
FIGURE 5: SCHOOL DRIVEWAY TURNING MOVEMENTS - EXISTING AM AND SCHOOL PM PEAK-HOUR
COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL - LYNNWOOD, WA (KH 090224097)

5.2. 2028 No-Build Turning Movement Calculations

The future analysis has been performed for the year of 2028. Existing volumes were grown by a 1.0% annual background growth rate. The 2028 no-build turning movements at the study intersections are shown in **Figure 6** and **Figure 7**.

5.3. 2028 Build Turning Movement Calculations

The 2028 build turning movements at the study intersections have been calculated by removing existing trips to and from the CPE and CPM development access points from the study network and adding the total peak hour trips generated by the proposed CPE and CPM development to the 2028 no-build turning movements. The 2028 build turning movements are shown in **Figure 8** and **Figure 9**. The turning movement calculations are provided in **Appendix C**.



KimleyHorn FIGURE 6: STUDY INTERSECTION TURNING MOVEMENTS - 2028 NO-BUILD AM AND SCHOOL PM PEAK-HOUR
COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL - LYNNWOOD, WA (KH 090224097)

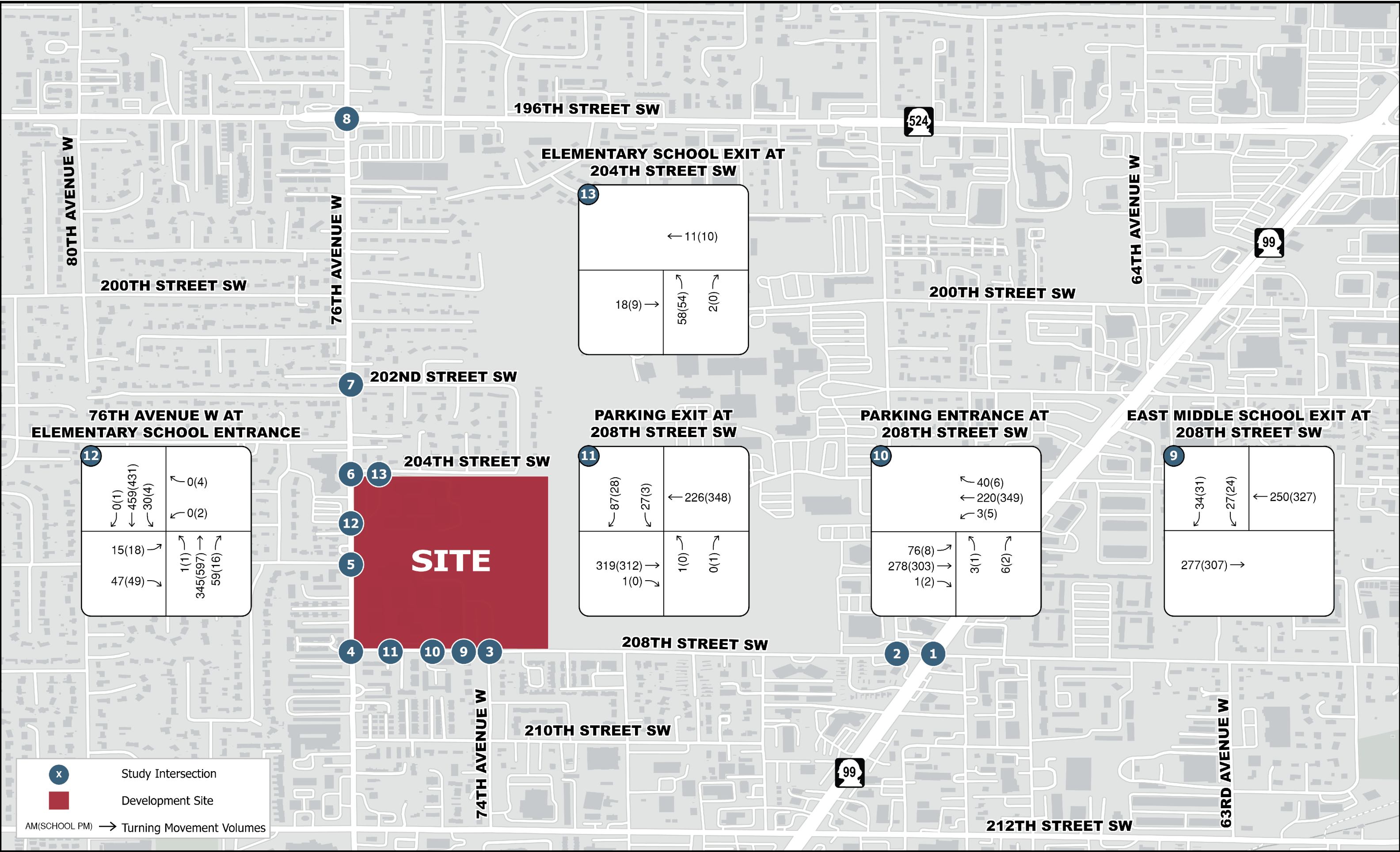


FIGURE 7: SCHOOL DRIVEWAY TURNING MOVEMENTS - 2028 NO-BUILD AM AND SCHOOL PM PEAK-HOUR
COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL - LYNNWOOD, WA (KH 090224097)

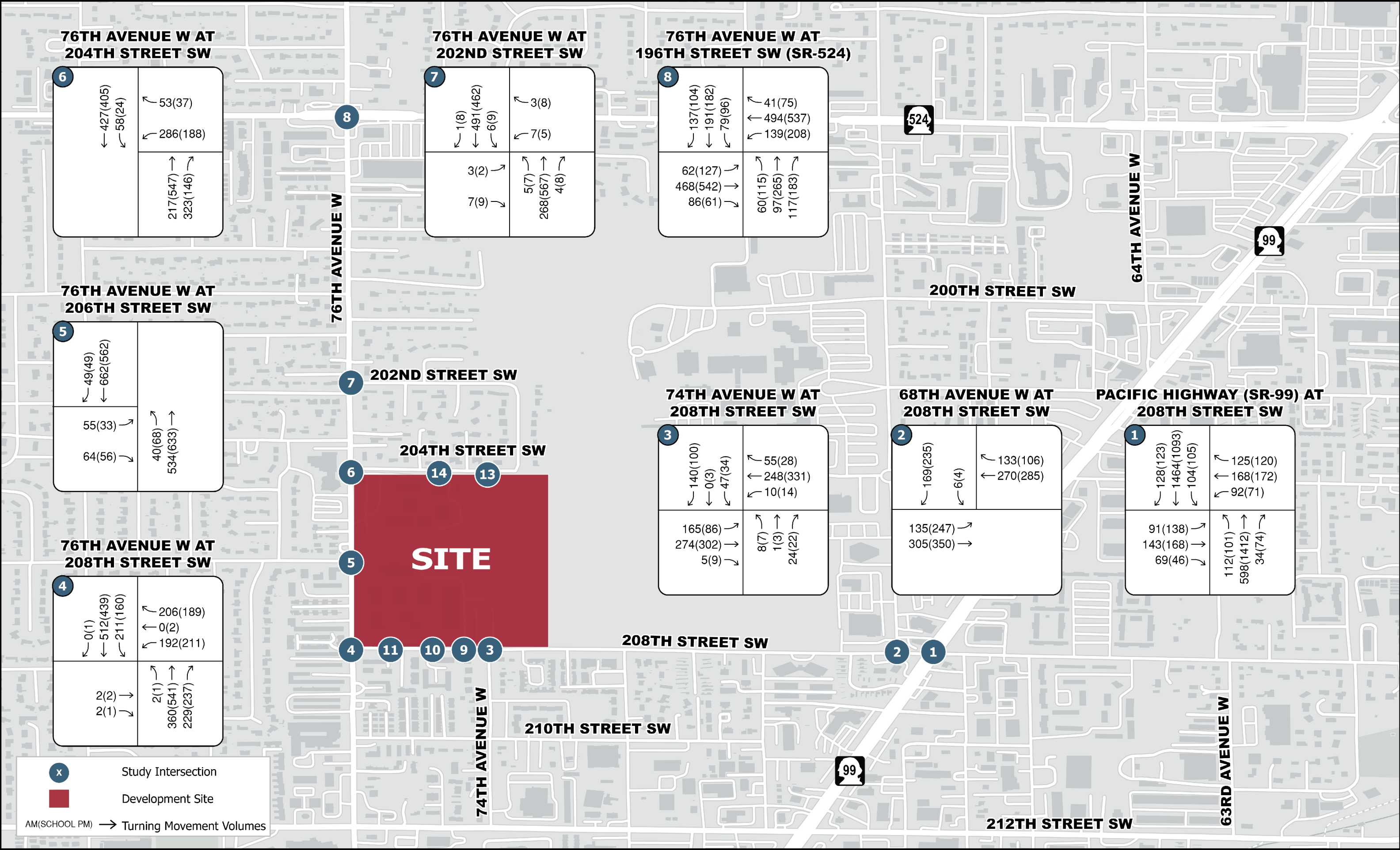


FIGURE 8: STUDY INTERSECTION TURNING MOVEMENTS - 2028 BUILD AM AND SCHOOL PM PEAK-HOUR
COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL - LYNNWOOD, WA (KH 090224097)

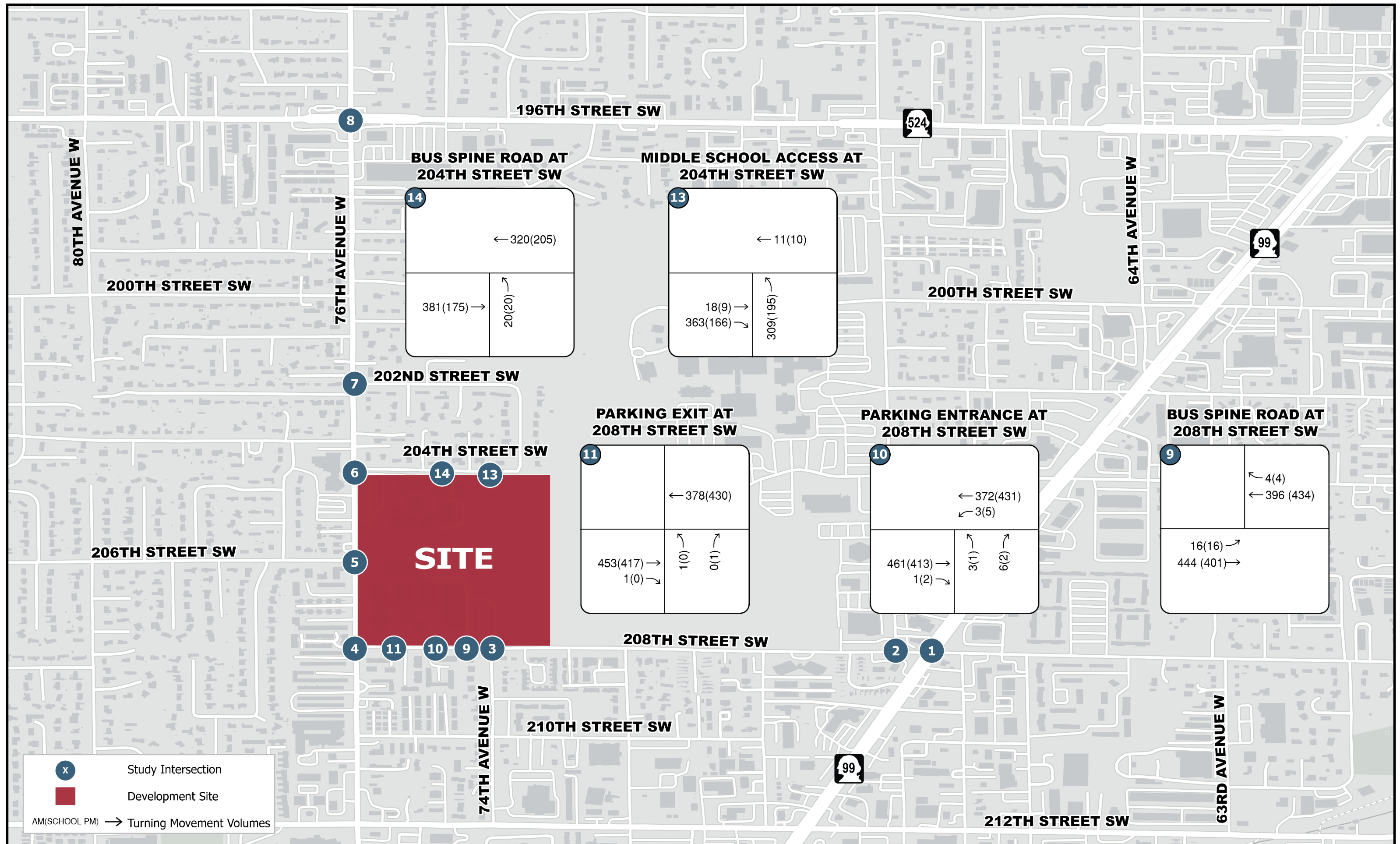


FIGURE 9: SCHOOL DRIVEWAY TURNING MOVEMENTS - 2028 BUILD AM AND SCHOOL PM PEAK-HOUR
COLLEGE PLACE ELEMENTARY AND MIDDLE SCHOOL - LYNNWOOD, WA (KH 090224097)

5.4. Level of Service Calculations

The LOS calculations have been performed using the existing signal timing, existing channelization, existing intersection control, peak hour factors, and heavy vehicle factors from the 2024 turning movement counts. These parameters have been used for the 2024 existing and 2028 no-build conditions except for intersection 6, which is analyzed as a signal for the 2028 horizon year. The 2024 existing and 2028 no-build LOS calculations are summarized for the AM and PM peak hour in **Table 3**. The 2028 build LOS calculations are summarized for the AM and PM peak hour in **Table 4**. The level of service information is included in **Appendix D**.

Table 3: Level of Service Summary – Existing Configuration

Intersection		2024 Existing Conditions				2028 No-Build Conditions			
		AM Peak Hour		School PM Peak Hour		AM Peak Hour		School PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
1.	Pacific Hwy (SR-99) at 208th St SW	C	26.7	C	23.6	C	27.8	C	24.7
2.	68th Ave W at 208th St SW	B	13.6	B	13.4	B	14.0	B	13.8
3.	74th Ave W at 208th St SW	B	13.0	B	14.7	B	13.2	C	15.1
4.	76th Ave W at 208th St SW	B	14.5	B	13.7	B	14.9	B	14.0
5.	76th Ave W at 206th St SW	C	15.5	C	17.1	C	16.1	C	18.0
6.	76th Av W at 204th St SW *	C	20.5	D	33.7	A	9.6	B	12.3
7.	76th Ave W at 202nd St SW	C	16.0	C	17.7	C	16.6	C	18.4
8.	76th Ave W at 196th St SW (SR-524)	B	16.5	C	20.8	B	16.9	C	21.4
9.	East MS Exit at 208th St SW	B	12.9	B	12.5	B	13.3	B	12.8
10.	Parking Entrance at 208th St SW	B	12.8	B	11.5	B	13.1	B	11.6
11.	Parking Exit at 208th St SW	C	15.7	B	10.4	C	16.2	B	10.5
12.	76th Ave W at ES Entrance/Church Exit	B	13.4	B	14.4	B	13.8	B	15.0
13.	ES Exit at 204th St SW	A	9.2	B	10.3	A	9.2	B	10.3

* Analyzed as TWSC in 2024 Existing Conditions and Signal in 2028 No-Build Conditions

The study area intersections are anticipated to operate at an acceptable LOS for the AM and School PM peak hour under the 2024 existing and 2028 no-build conditions.

Table 4: Level of Service Summary – Future Configuration

Intersection		2028 Build Conditions			
		AM Peak Hour		School PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
1.	Pacific Hwy (SR-99) at 208th St SW	C	30.3	C	25.3
2.	68th Ave W at 208th St SW	B	14.9	B	14.7
3.	74th Ave W / ES Access at 208th St SW	D	25.5	C	18.4
4.	76th Ave W at 208th St SW	B	17.9	B	15.8
5.	76th Ave W at 206th St SW	C	21.5	C	18.3
6.	76th Ave W at 204th St SW	B	15.7	B	17.8
7.	76th Ave W at 202nd St SW	C	16.5	C	17.8
8.	76th Ave W at 196th St SW (SR-524)	B	16.2	C	21.0
10.	Parking Entrance at 208th Street SW	B	13.3	B	13.1
11.	Parking Exit at 208th Street SW	C	15.6	B	11.0
13.	Middle School Access at 204th Street SW	B	10.6	A	9.6
14.	Bus Spine Rd at 204 th St SW	C	15.3	B	11.3

The study intersections are anticipated to operate at an acceptable LOS for the AM and School PM peak hour under the 2028 build conditions.

6. CPE AND CPM DEVELOPMENT OPERATIONS

6.1. Drop-Off / Pick-Up Analysis

The drop-off/pick-up operations have been evaluated in more detail for CPM along 204th Street SW, including the intersection with 76th Avenue W, based on comments from City staff. Drop-off/pick-up operations typically occur in less than a 30-minute period. This detailed analysis has been performed to evaluate the operations and queuing to evaluate ways to allow buses to efficiently exit the site to maintain schedules and to reduce the potential for trips to use 73rd Avenue W and 202nd Street SW.

6.1.1. Methodology

The methodology used for the analysis provided earlier in this report is based on industry standards and City guidelines, which evaluate the operations over a 1-hour period and a total intersection peak hour factor. The AM and PM peak hours have been split into peak and non-peak periods to represent the peak drop-off/pick-up times and the rest of the peak hour, respectively. The peak drop-off/pick-up times have been evaluated by adjusting the peak hour factors, which are a measure of the amount of traffic that occurs within the peak 15 minutes of an hour, for movements with school related traffic. These movements include the westbound left-

and right-turns, the northbound right-turn, and the southbound left-turn. The peak drop-off/pick-up period has been evaluated using a peak hour factor of 0.50 and the non-peak portion of the hour has been evaluated using a peak-hour factor of 0.75.

Additionally, the intersection of 204th Street SW at 76th Avenue W has been evaluated with adjusted signal timings to provide additional green time to the westbound movements along 204th Street SW. The standard cycle length is 60 seconds with 30 seconds for the north-south movements and 30 seconds for the westbound movements. The signal timings have been adjusted to use a cycle length of 75 seconds with 30 seconds for the north-south movements and 45 seconds for the westbound movement. The intent is to provide additional westbound green time to reduce the queue along 204th Street SW.

6.1.2. Intersection Operations

The intersection analysis with the peak hour factor and signal timing adjustments are summarized in **Table 7**.

Table 5: 204th Street SW at 76th Avenue W Operations

Peak Hour	Period	Intersection Delay (sec)	Intersection LOS
AM Peak Hour	Peak	56.1	E
	Non-Peak	15.7	B
	Average	35.9	D
PM Peak Hour	Peak	41.9	D
	Non-Peak	21.4	C
	Average	31.7	C

The analysis shows that the intersection of 204th Street SW at 76th Avenue W is anticipated to operate at LOS E during the AM peak period but would operate at acceptable LOS D during the AM peak hour with the adjusted peak hour factors and signal timings. The intersection is anticipated to operate at LOS D during the PM peak period and LOS C during the PM peak hour with the adjusted peak hour factors and signal timings. The intersection operations would therefore meet the City thresholds over the AM and PM peak hours.

6.1.3. 204th Street SW Queuing Analysis

The westbound queue along 204th Street SW was also evaluated using the same parameters as the intersection analysis. The site plan shows approximately 275 feet between the westbound stop-bar and the bus exit. The westbound 95th Percentile queue lengths are summarized in **Table 6**.

Table 6: 204th Street SW at 76th Avenue W Queuing

Peak Hour	Period	Westbound Queue (veh)	Westbound Queue (ft)
AM Peak Hour	Peak	15.5	390
	Non-Peak	8.2	205
PM Peak Hour	Peak	8.3	210
	Non-Peak	4.7	120

The queuing analysis shows the AM peak period 95th Percentile queue length will be approximately 390 feet. This would mean that during the AM peak period the westbound queue would extend beyond the bus exit access. This would mean that approximately 115 feet of the queue would extend beyond the bus exit area. There is approximately 360 feet of distance between the bus exit and the CPM access. This means there is sufficient space for westbound vehicles to queue. The AM non-peak period, PM peak period, and PM non-peak period all show that there is sufficient distance for westbound queues between the stop-bar and the bus exit access is not blocked.

There is signing (“No Blocking” or similar) and striping proposed along 204th Street SW at the bus exit access to help prevent westbound vehicles blocking the bus exit access (see **Figure 2** for a schematic of the proposed striping). There is some flexibility in bus schedules, but bus schedules are not able to be fully moved outside of the AM peak period to maintain schedules for other schools in the district.

6.1.4. Drop-Off/Pick-Up Queuing Analysis

The queues for the on-site drop-off/pick-up operations of CPM have also been evaluated. Drop-off/pick-up operations take an average of 15 seconds. This average does not consider the length of time vehicles spend in the queue, only the amount of time the vehicle is stopped, and students are entering/exiting.

The total loop length required is dependent on the number of vehicles that can be simultaneously served within the drop-off/pick-up loop. The available drop-off/pick-up areas are based on the site plan shown in **Figure 2**. The CPE loop has an approximate effective drop-off/pick-up length of approximately 400 feet and the CPM loop has an approximate effective drop-off/pick-up length of approximately 600 feet with an additional 260 feet on the east side of the loop and 150 feet in the lane along 204th Street SW. A conservative 40-foot drop-off/pick-up service spot was assumed to estimate the number of vehicles that can be simultaneously served. The queue is identified as the additional queue beyond the area required for the vehicles being served simultaneously. A queued vehicle was assumed to be 25 feet. The expected queuing for CPE and CPM is summarized in **Table 7** and **Table 8** respectively.

Table 7: CPE Expected Drop-Off/Pick-Up Queueing

Vehicles Served Simultaneously	Served Vehicle Queue (ft)	95% Queue (veh)	Vehicle Queue (ft)	Total Loop Length Required
3	120	8	200	320
4	160	1	25	185

Table 8: CPM Expected Drop-Off/Pick-Up Queueing

Vehicles Served Simultaneously	Served Vehicle Queue (ft)	95% Queue (veh)	Vehicle Queue (ft)	Total Loop Length Required
5	200	6	150	350
6	240	0	0	240

It is anticipated that a minimum loop length of 320 feet, and 350 feet is required for the drop-off/pick-up loop and queuing space for CPE and CPM, respectively. There is proposed to be approximately 400 feet of queue area for CPE and a total of up to 1,010 feet of queue area for CPM. Additionally, CPM can service more than 6 vehicles simultaneously to accommodate more vehicles if service rates are more than 15 seconds per vehicle. The queuing calculations are shown in **Appendix E**.

6.2. Parking

The site plan for the CPE and CPM development, shown in **Figure 2**, shows 85 parking spaces adjacent to the CPE portion of the development and 106 parking spaces adjacent to the CPM portion of the site. An additional 14 parking spaces are accessible via the bus lane near the service yard/loading dock area. The existing parking area along 208th Street SW from the old CPM development is to remain and includes 16 spaces. A total of 221 parking spaces are available on the CPE and CPM development site. Off-street space for loading and unloading students from the school buses is available along the entirety of the CPE/CPM bus drop-off lane that stretches from 208th Street SW to 204th Street SW.

The proposed 221 parking stalls align closely with the real-world usage patterns reflected in the *ITE Parking Manual*. The *ITE Parking Manual* requires 0.14 parking stalls per 1 elementary school student and 0.10 parking stalls per 1 middle school student. This equates to 77 parking stalls for CPE and 100 parking stalls for CPM; 177 parking stalls in total. This indicates that the proposed parking exceeds the anticipated demand, accommodating parking for students, staff, and visitors. The shared nature of the campus will allow staff to park and enter the building from either the CPE or CPM parking areas.

6.3. CPE and CPM Operations Summary

The detailed intersection analysis shows that the intersection of 204th Street SW at 76th Avenue W is anticipated to operate within City thresholds and the proposed signing and striping along 204th Street SW should accommodate bus operations, even during the AM peak hour peak period. The drop-off/pick-up areas for CPE and CPM are anticipated to accommodate the operations and the available parking across the campuses are anticipated to meet the parking demand.

7. COLLISION ANALYSIS

The latest five-year collision history from January 1, 2019, through December 31, 2023, was obtained from Washington State Department of Transportation (WSDOT). The collision data is summarized in **Table 9**. The collision data is provided in the **Appendix F**.

Table 9: Five-Year Collision Data Summary

Intersection		Collision Type							Total	Per Year
		Rear-End	At-Angle	Side-swipe	Opp. Dir.	Same Dir.	Fixed Object/Other	Ped/Bike		
1.	Pacific Hwy (SR-99) at 208th St SW	12	6	3	2	1	2	0	26	5.2
2.	68th Ave W at 208th St SW	3	1	0	1	0	0	0	5	1
3.	74th Ave W at 208th St SW	0	0	0	0	0	0	1	1	0.2
4.	76th Ave W at 208th St SW	4	1	1	2	0	1	0	9	1.8
5.	76th Ave W at 206th St SW	2	0	0	0	0	0	0	2	0.4
6.	76th Ave W at 204th St SW	1	0	0	0	0	0	0	1	0.2
7.	76th Ave W at 202nd St SW	0	1	0	0	0	0	0	1	0.2
8.	76th Ave W at 196th St SW (SR-524)	5	5	3	13	1	2	2	31	6.2
9.	East MS Exit at 208th St SW	0	0	0	0	0	0	0	0	0
10.	West MS Entrance at 208th St SW	0	0	0	0	0	0	0	0	0
11.	West MS Exit at 208th St SW	0	0	0	0	0	0	0	0	0
12.	76th Ave W at ES Entrance	0	1	0	0	0	0	0	1	0.2
13.	ES Exit at 204th StSW	0	0	0	0	0	0	0	0	0

The collision types are consistent with the anticipated collisions for the study intersections and there were no fatalities with two suspected serious injury collisions. There were three pedestrian collisions.

The 76th Avenue W at 196th Street SW (SR-524) observed 31 collisions within the study period. The most frequent collision type was opposite direction. The primary cause of the collisions was failure to grant right-of-way and improper turn/merge. The intersection operates with protected permissive left-turn phasing. The intersection should be reviewed for protected only left-turn phasing.

The Pacific Highway (SR-99) at 208th Street SW observed 26 collisions within the study period. The most frequent collision type was rear end collisions. The primary cause of the collisions was inattention, distracted driving, and following too closely.

8. TRAFFIC IMPACT FEES

The City has a transportation impact fee effective from January 1, 2015. The City Transportation Impact Fee Schedule has a fee of \$0.82 per SF for an Elementary and Middle School for Zone A (City Center and Mall) and a fee of \$1.27 per SF for an Elementary and Middle School for Zone B (Remainder of the City). The CPE and CPM development is located in in Zone B.

The existing CPE has an approximate gross square footage of 53,590 SF. The proposed CPE has an approximate gross square footage of 79,054 SF. The proposed CPE and CPM development also contains a shared kitchen and maintenance space that has an approximate gross square footage of 11,096 square feet that is applied evenly (5,548 SF) to both the proposed CPE and CPM. The new net square footage for the proposed CPE is 31,012 SF. The evaluation of mitigation fees on a per square-foot basis would result in a fee of \$39,385.24 for CPE; however, the student capacity increase from 541 to 550 results in an increase of only 1 PM peak hour trip.

The existing CPM has an approximate gross square footage of 86,859 SF. The proposed CPM has an approximate gross square footage of 129,687 SF. The proposed CPE and CPM development also contains a shared kitchen and maintenance space that has an approximate gross square footage of 11,096 SF that is applied evenly (5,548 SF) to both the proposed CPE and CPM. The new net square footage for the proposed CPM is 48,376 SF. The evaluation of mitigation fees on a per square-foot basis would result in a fee of \$61,437.52 for CPM; however, the student capacity decreases from 1,053 to 1,004 and results in a decrease of 4 PM peak hour trips.

The transportation impact fee required by the proposed CPE and CPM development should therefore be \$0 since the capacity of the school results in a net decrease of 3 PM peak hour trips. Lynnwood Municipal Code (LMC) 3.105.080.B provides the City with the ability to exempt traffic impact fees for “development activities with broad public purposes” and the CPE and CPM should fit this definition and would arguably not have mitigation fees based on the overall capacities of the schools.

8.1. 73rd Avenue W

Immediately north of the CPE and CPM site consists of single-family detached housing. Speeding and additional traffic due to schools along 73rd Avenue W between 204th Street SW and 202nd Street SW are concerns identified by the public. Comments describe existing CPE and CPM traffic using the residential road as a detour and present concerns for the future CPE and CPM draft site plan shifting access further to the east and encouraging traffic to use 73rd Avenue W.

The detailed analysis shows that the intersection of 204th Street SW at 76th Avenue W should accommodate school related traffic, especially with the change in signal timing to increase green time for the westbound approach. These measures should help reduce the potential for school related traffic using 73rd Avenue W. If it is determined that additional traffic calming measures are warranted, they could include speed calming devices. Speed calming devices could be placed along 73rd Avenue W and should have approval from emergency responders and more than 65% approval of the neighbors along the roadway before being installed as they will provide traffic calming even when school is not in session.

9. CONCLUSIONS

CPE currently has two access driveways, one connecting to 76th Avenue W and one to 204th Street SW. CPM currently has four access driveways connecting to 208th Street SW. The future site plan consolidates CPE trips to a single access along 208th Street SW and CPM trips to a single access along 204th Street SW. All future bus trips will enter along 208th Street SW and exit along 204th Street SW to 76th Avenue.

CPE currently has capacity for 541 students and will increase to 550 students. CPM currently has capacity for 1,053 students and will decrease to 1,004 students. The total trip generation, based on capacity, is shown to result in a decrease in trip generation. The combined total for the CPE and CPM development is anticipated to result in an overall reduction in trip generation with approximately 82 fewer ADTs with approximately 26 fewer AM peak hour trips and 13 fewer School PM peak hour trips being generated. The study area intersections are anticipated to operate at an acceptable LOS for the AM and School PM peak hour under the 2024 existing, 2028 no-build, and 2028 build conditions.

There are improvements proposed along 204th Street SW, including additional westbound green time, signing and striping around the bus exit, and a lane leading to the CPM drop-off/pick-up area. These improvements are designed to reduce the potential for school-related trips to use 73rd Avenue W and should mitigate the impacts of the redesigned site. Traffic mitigation fees should not be required since the change in student capacity would result in a decrease in PM peak hour trips and LMC 3.105.080.B allows for an exemption in traffic mitigation fees for “development activities with broad public purposes.”

APPENDIX A
TRIP GENERATION CALCULATIONS

College Place Elementary and Middle School
Trip Generation Based on Student Capacity
KH 090224097

Trip Generation for: Weekday
(a.k.a.): Average Weekday Daily Trips (AWDT)

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS					DIRECTIONAL ASSIGNMENTS						
									TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Elementary School	550 students	520	2.27	50%	50%	1249	0%	0	1249	0%	0	0%	0	1249	0	0	0	0	625	624
Elementary School (Removed)	-541 students	520	2.27	50%	50%	-1228	0%	0	-1228	0%	0	0%	0	-1228	0	0	0	0	-614	-614
Elementary School Total						21		0	21		0		0	21.00	0	0	0	0	11	10
Middle School/Junior High School	1,004 students	522	2.10	50%	50%	2108	0%	0	2108	0%	0	0%	0	2108	0	0	0	0	1054	1054
Middle School/Junior High School (Removed)	-1,053 students	522	2.10	50%	50%	-2211	0%	0	-2211	0%	0	0%	0	-2211	0	0	0	0	-1106	-1105
Middle School/Junior High School Total						-103		0	-103		0		0	-103.00	0	0	0	0	-52	-51
Total						-82		0	-82		0		0	-82.00	0	0	0	0	-41	-41

College Place Elementary and Middle School
Trip Generation Based on Student Capacity
KH 090224097

Trip Generation for: **Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 7 and 9 AM**
(a.k.a.): **Weekday AM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
									TOTAL		PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Elementary School	550 students	520	0.74	54%	46%	407	0%	0.00	407	0%	0	0%	0.00	407	0	0	0	0	220	187
Elementary School (Removed)	-541 students	520	0.74	54%	46%	-400	0%	0.00	-400	0%	0	0%	0.00	-400	0	0	0	0	-216	-184
Elementary School Total						7		0.00	7		0		0.00	7.00	0	0	0	0	4	3
Middle School/Junior High School	1,004 students	522	0.67	54%	46%	673	0%	0.00	673	0%	0	0%	0.00	673	0	0	0	0	363	310
Middle School/Junior High School (Removed)	-1,053 students	522	0.67	54%	46%	-706	0%	0.00	-706	0%	0	0%	0.00	-706	0	0	0	0	-381	-325
Middle School/Junior High School Total						-33		0.00	-33		0		0.00	-33.00	0	0	0	0	-18	-15
Total						-26		0.00	-26		0		0.00	-26.00	0	0	0	0	-14	-12

College Place Elementary and Middle School
Trip Generation Based on Student Capacity
KH 090224097

Trip Generation for: Weekday, Peak Hour of Generator
(a.k.a.): Weekday School PM Peak Hour

			NET EXTERNAL TRIPS BY TYPE																	
			IN BOTH DIRECTIONS											DIRECTIONAL ASSIGNMENTS						
LAND USES	VARIABLE	ITE LU code	Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
			Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Elementary School	550 students	520	0.45	46%	54%	248	0%	0.00	248	0%	0	0%	0.00	248	0	0	0	0	114	134
Elementary School (Removed)	-541 students	520	0.45	46%	54%	-243	0%	0.00	-243	0%	0	0%	0.00	-243	0	0	0	0	-112	-131
Elementary School Total						5		0.00	5		0		0.00	5.00	0	0	0	0	2	3
Middle School/Junior High School	1,004 students	522	0.36	46%	54%	361	0%	0.00	361	0%	0	0%	0.00	361	0	0	0	0	166	195
Middle School/Junior High School (Removed)	-1,053 students	522	0.36	46%	54%	-379	0%	0.00	-379	0%	0	0%	0.00	-379	0	0	0	0	-174	-205
Middle School/Junior High School Total						-18		0.00	-18		0		0.00	-18.00	0	0	0	0	-8	-10
Total						-13		0.00	-13		0		0.00	-13.00	0	0	0	0	-6	-7

College Place Elementary and Middle School
Trip Generation Based on Student Capacity
KH 090224097

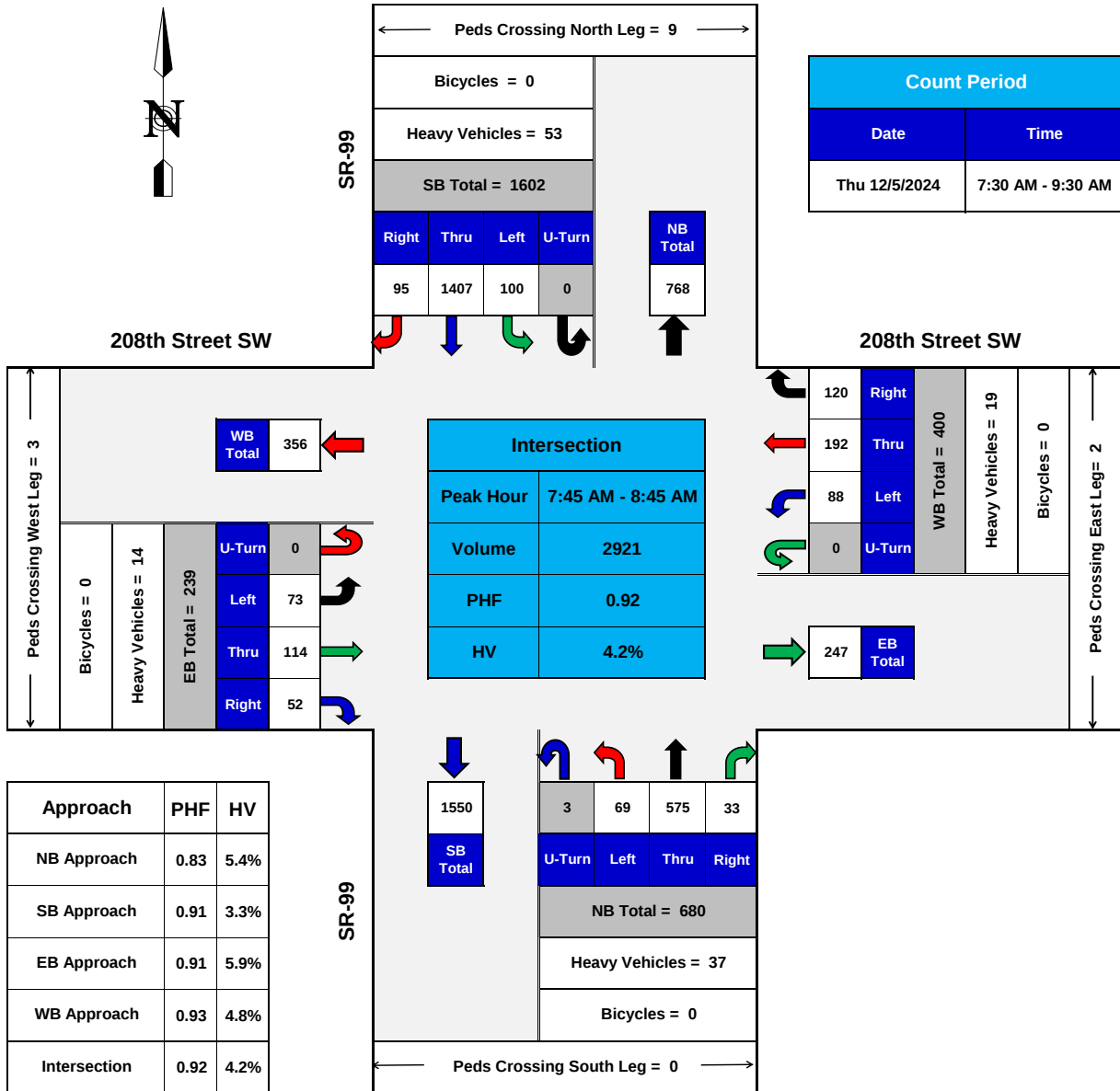
Trip Generation for: Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 4 and 6 PM
(a.k.a.): Weekday PM Peak Hour

										NET EXTERNAL TRIPS BY TYPE										
										IN BOTH DIRECTIONS					DIRECTIONAL ASSIGNMENTS					
LAND USES	VARIABLE	ITE LU code	Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
			Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Elementary School	550 students	520	0.16	46%	54%	88	0%	0.00	88	0%	0	0%	0.00	88	0	0	0	0	40	48
Elementary School (Removed)	-541 students	520	0.16	46%	54%	-87	0%	0.00	-87	0%	0	0%	0.00	-87	0	0	0	0	-40	-47
Elementary School Total						1		0.00	1		0		0.00	1.00	0	0	0	0	0	1
Middle School/Junior High School	1,004 students	522	0.15	48%	52%	151	0%	0.00	151	0%	0	0%	0.00	151	0	0	0	0	72	79
Middle School/Junior High School (Removed)	-1,053 students	522	0.15	48%	52%	-158	0%	0.00	-158	0%	0	0%	0.00	-158	0	0	0	0	-76	-82
Middle School/Junior High School Total						-7		0.00	-7		0		0.00	-7.00	0	0	0	0	-4	-3
Total						-6		0.00	-6		0		0.00	-6.00	0	0	0	0	-4	-2

APPENDIX B
COUNT DATA

SR-99 @ 208th Street SW

Lynnwood, WA



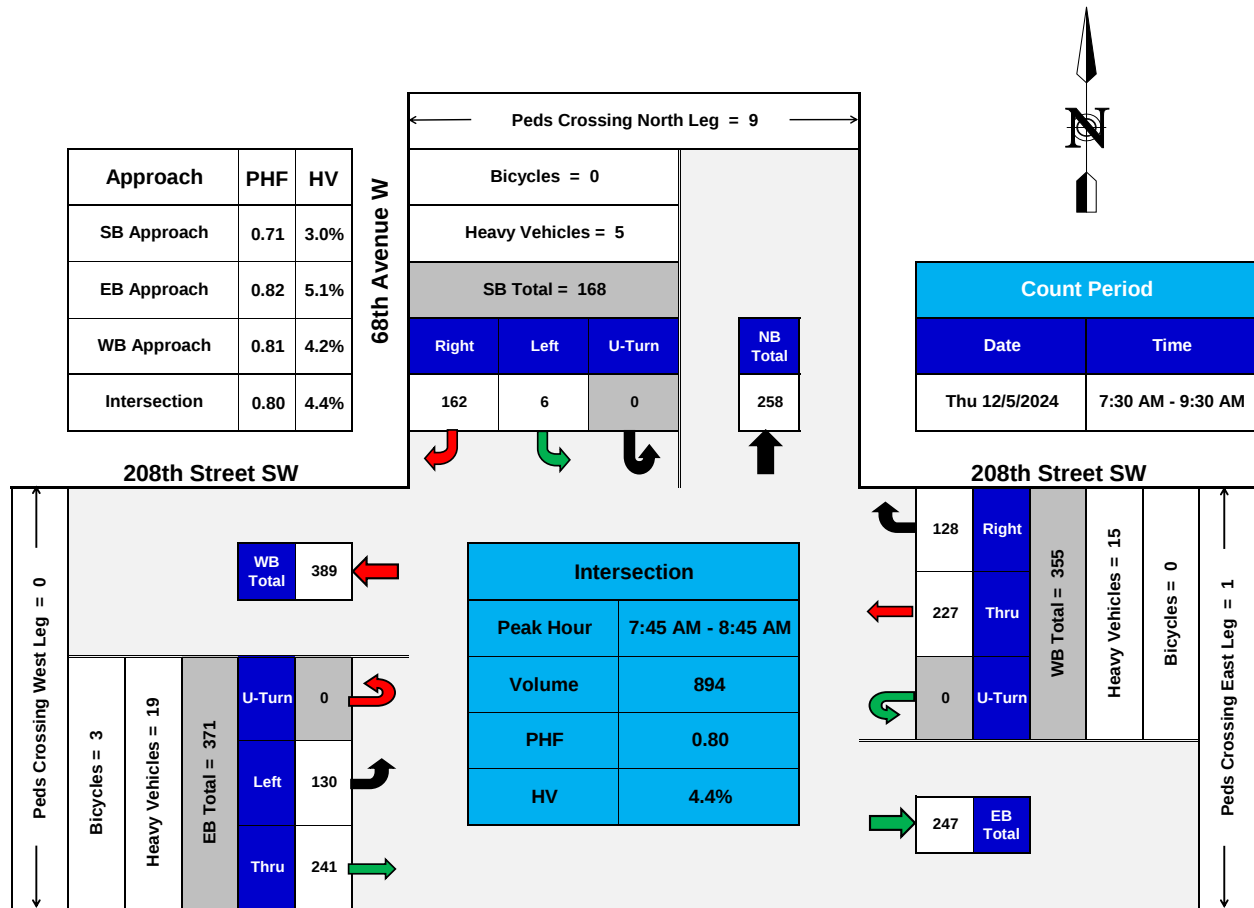
PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



68th Avenue W @ 208th Street SW
Lynnwood, WA

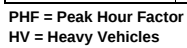


PHF = Peak Hour Factor
 HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY



Lynnwood, WA



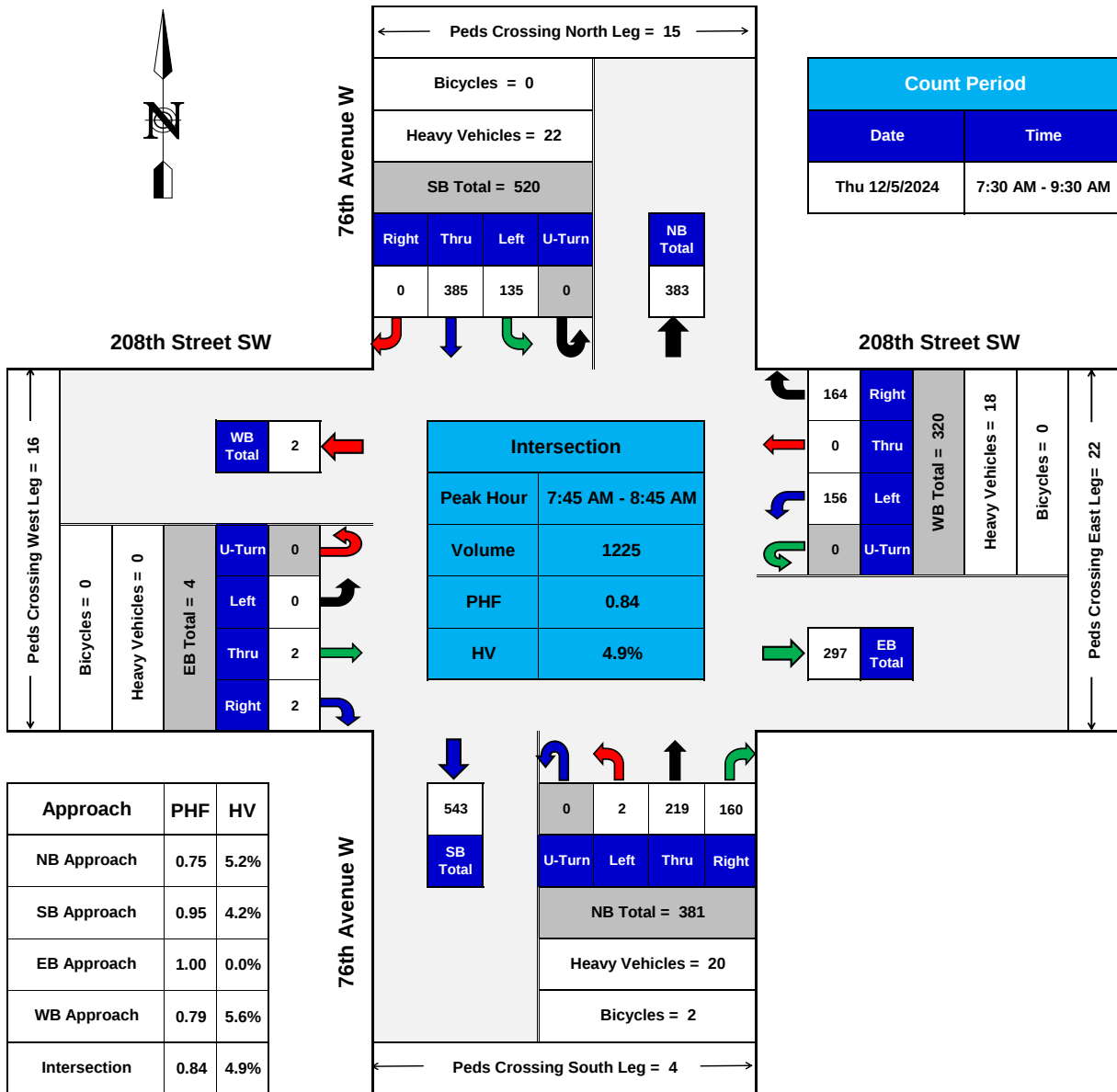
PEAK HOUR SUMMARY



TRAFFIC DATA GATHERING

76th Avenue W @ 208th Street SW

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

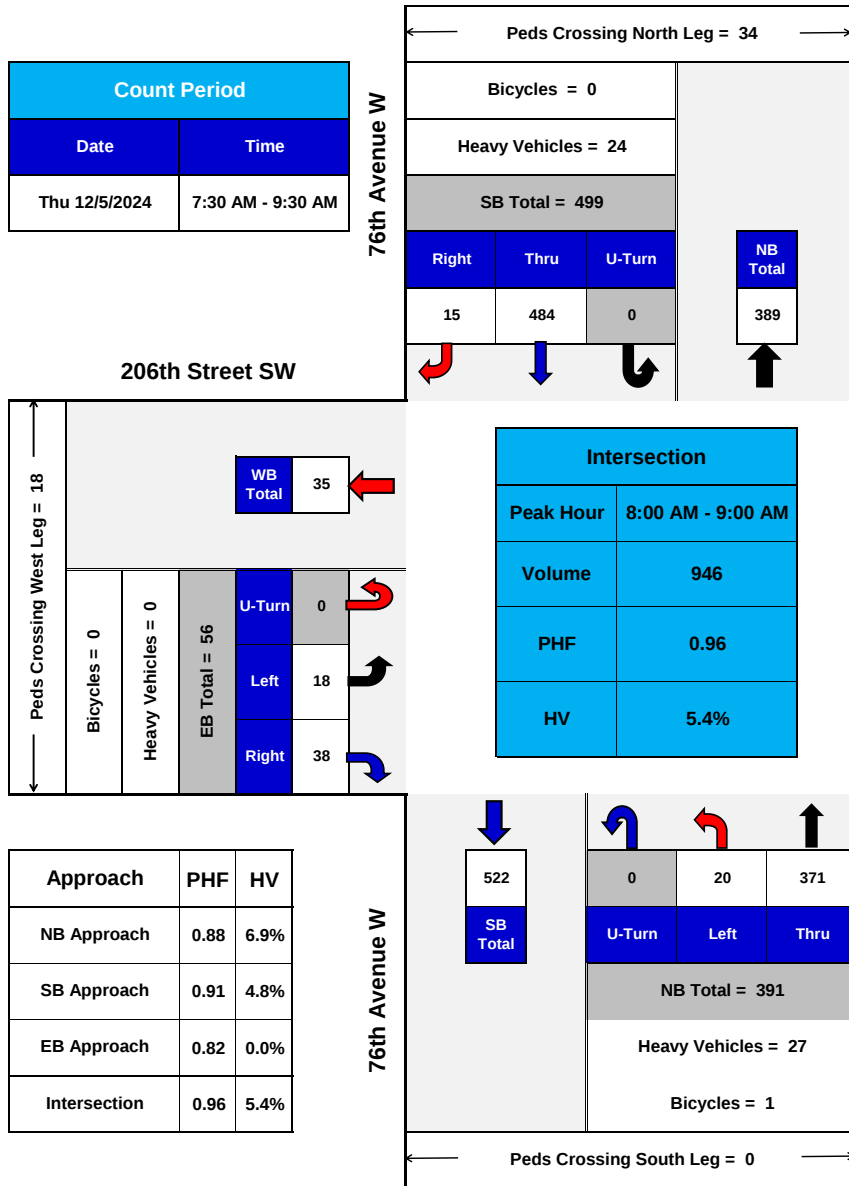
PEAK HOUR SUMMARY



TRAFFIC DATA GATHERING

76th Avenue W @ 206th Street SW

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

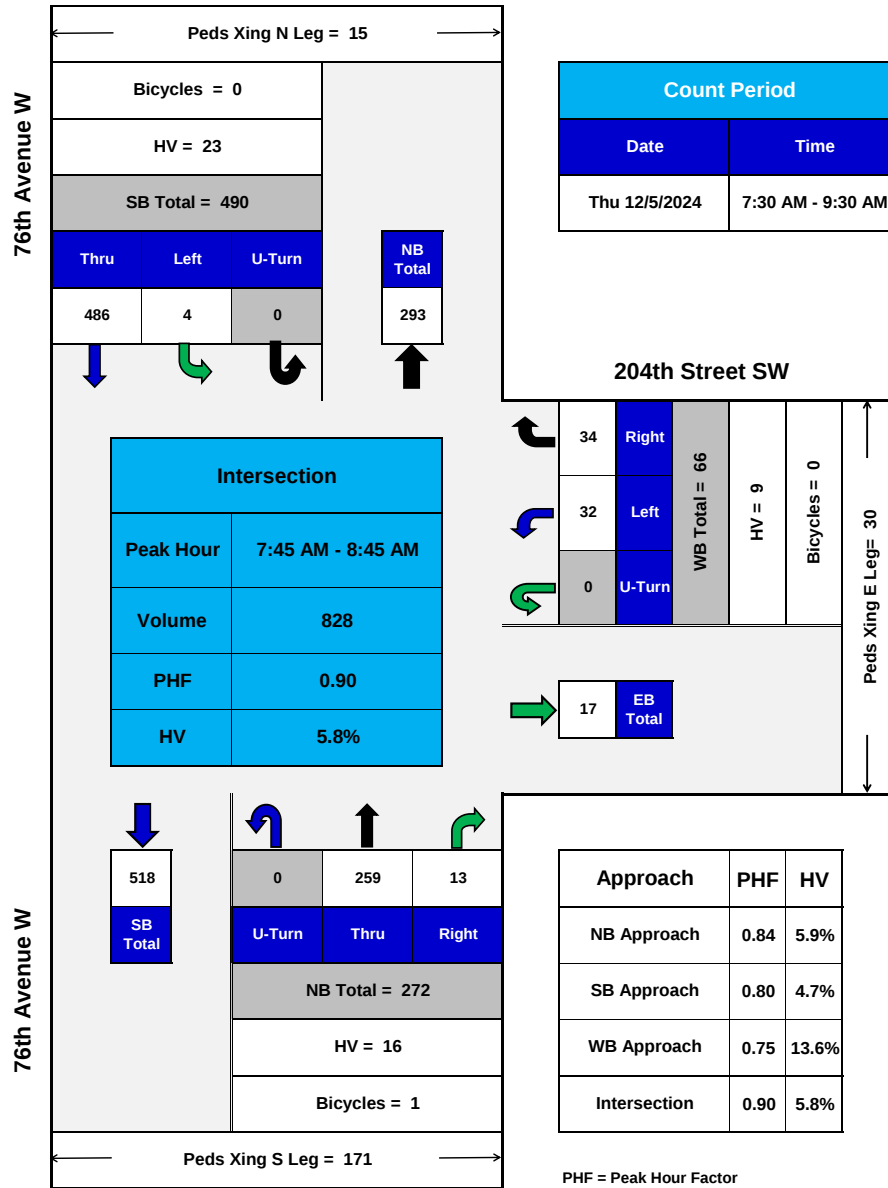
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 204th Street SW

Lynnwood, WA



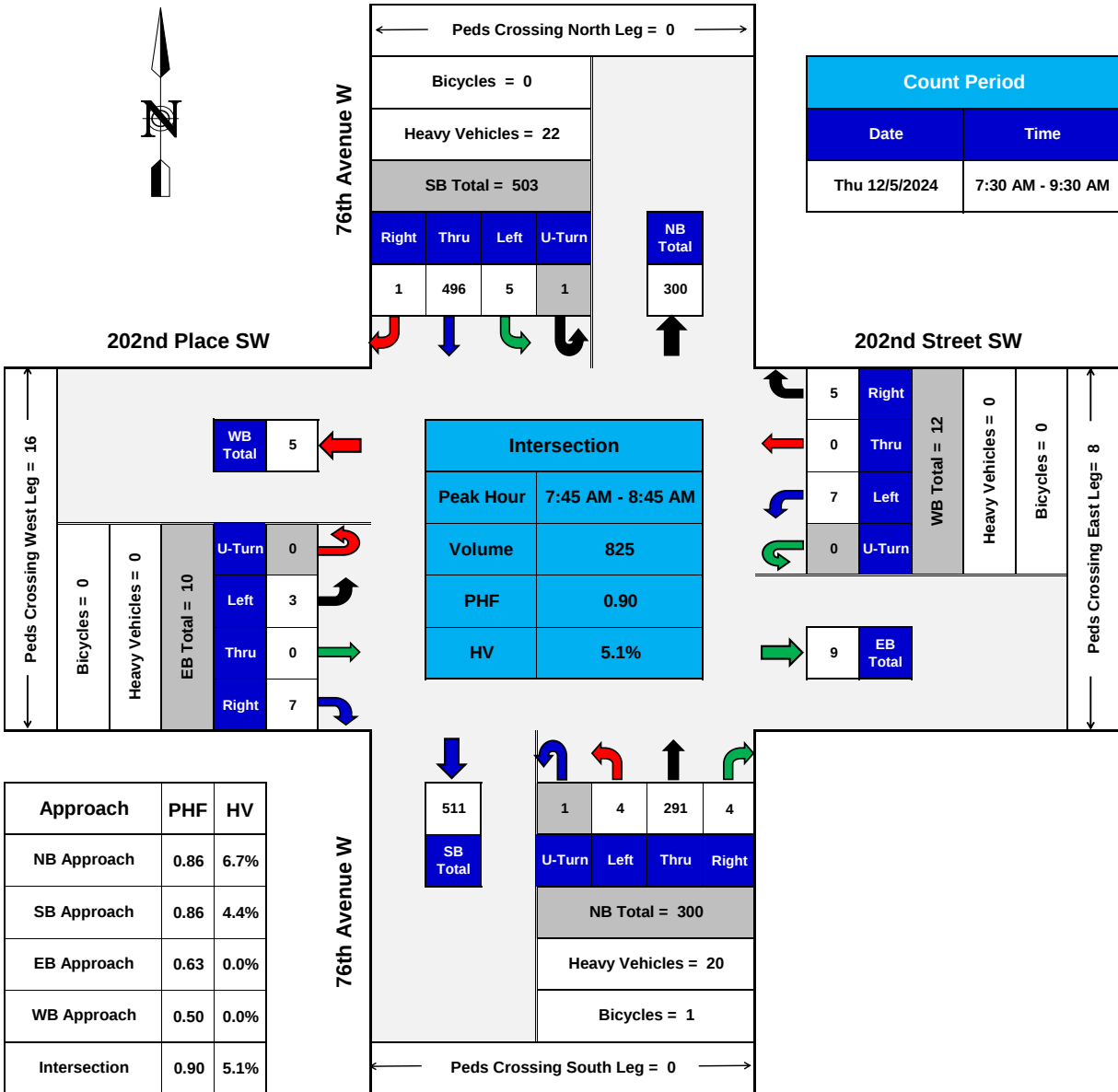
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 202nd Street SW/202nd Place SW

Lynnwood, WA



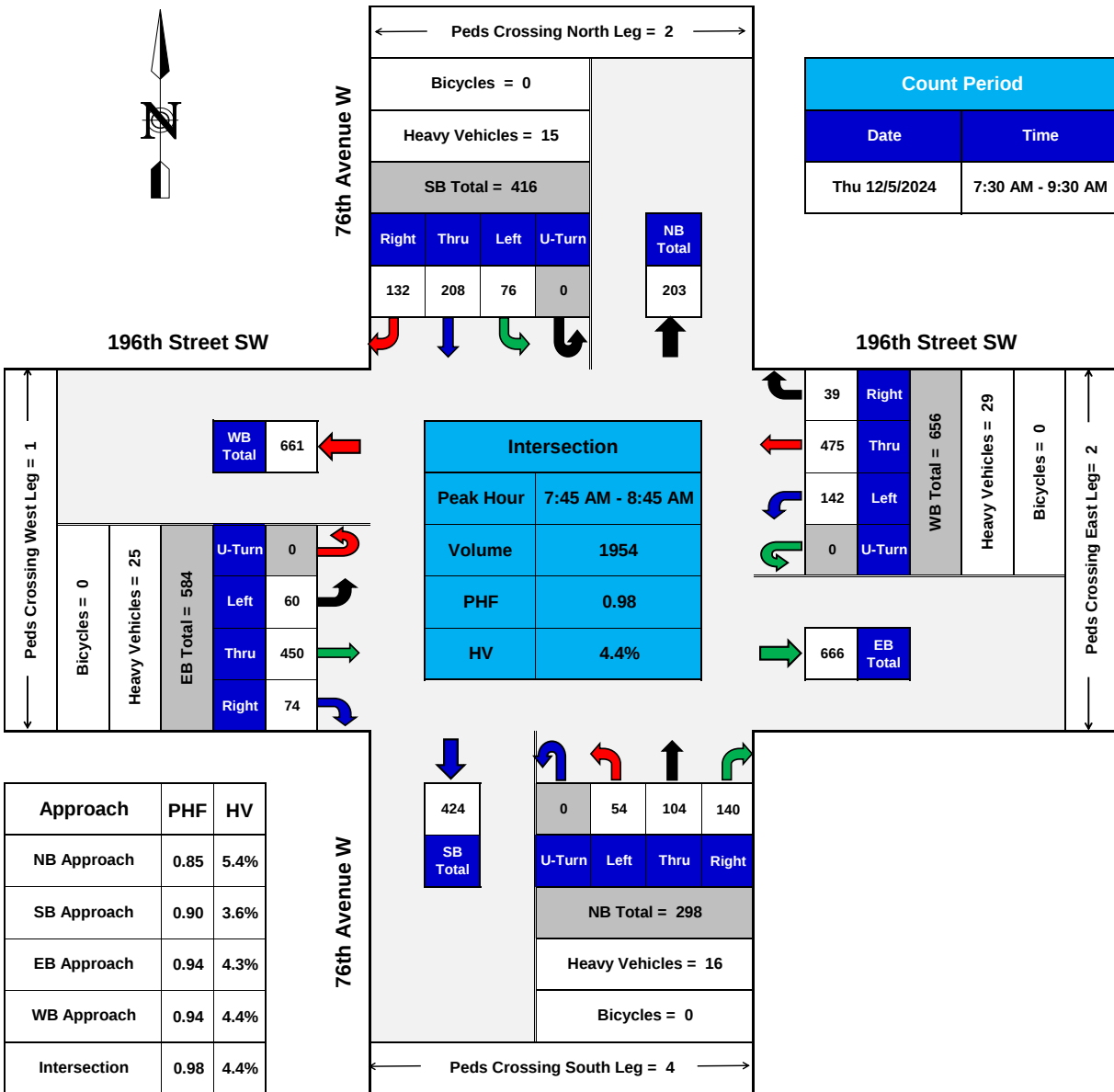
PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



Lynnwood, WA

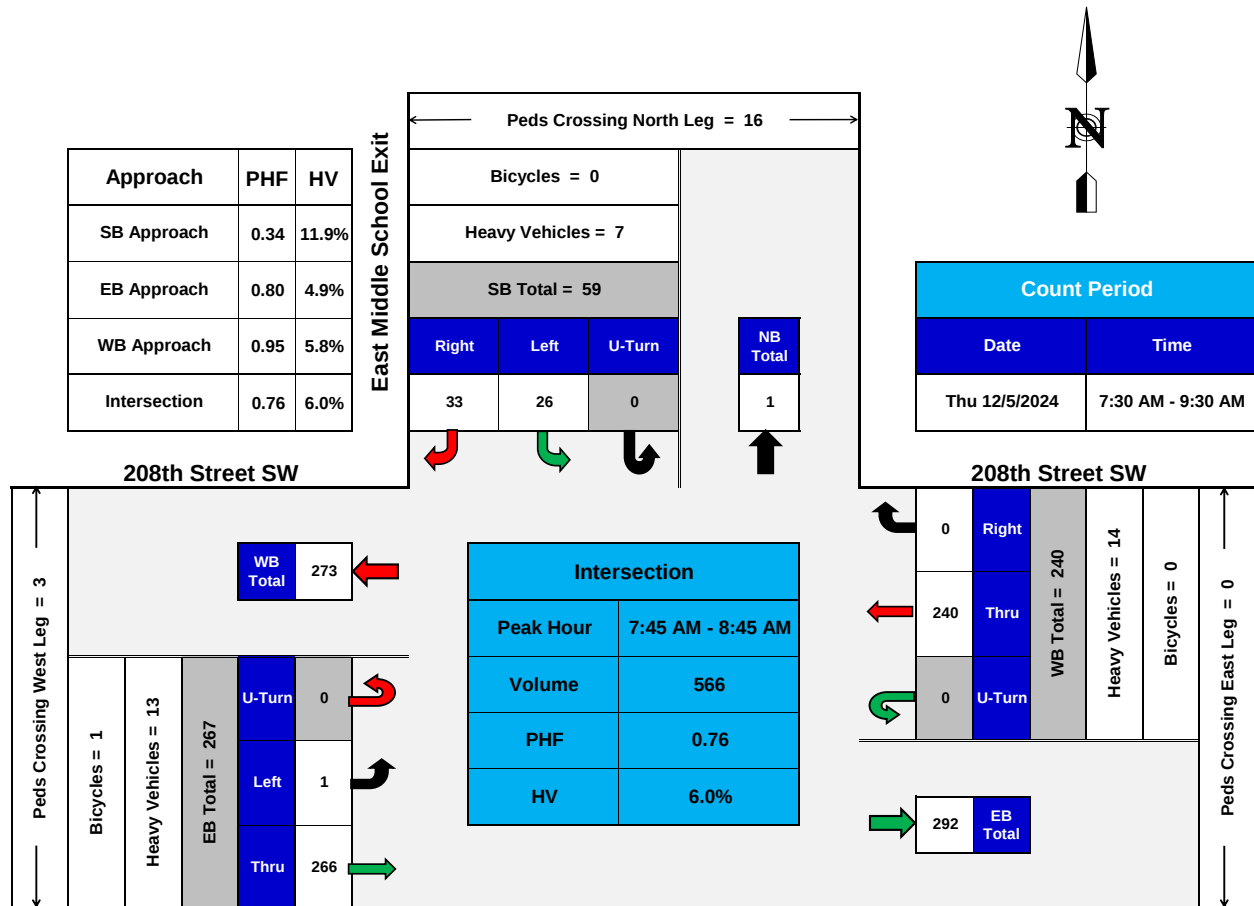


TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY

**DTG** **TRAFFIC DATA GATHERING**

East Middle School Exit @ 208th Street SW
Lynnwood, WA



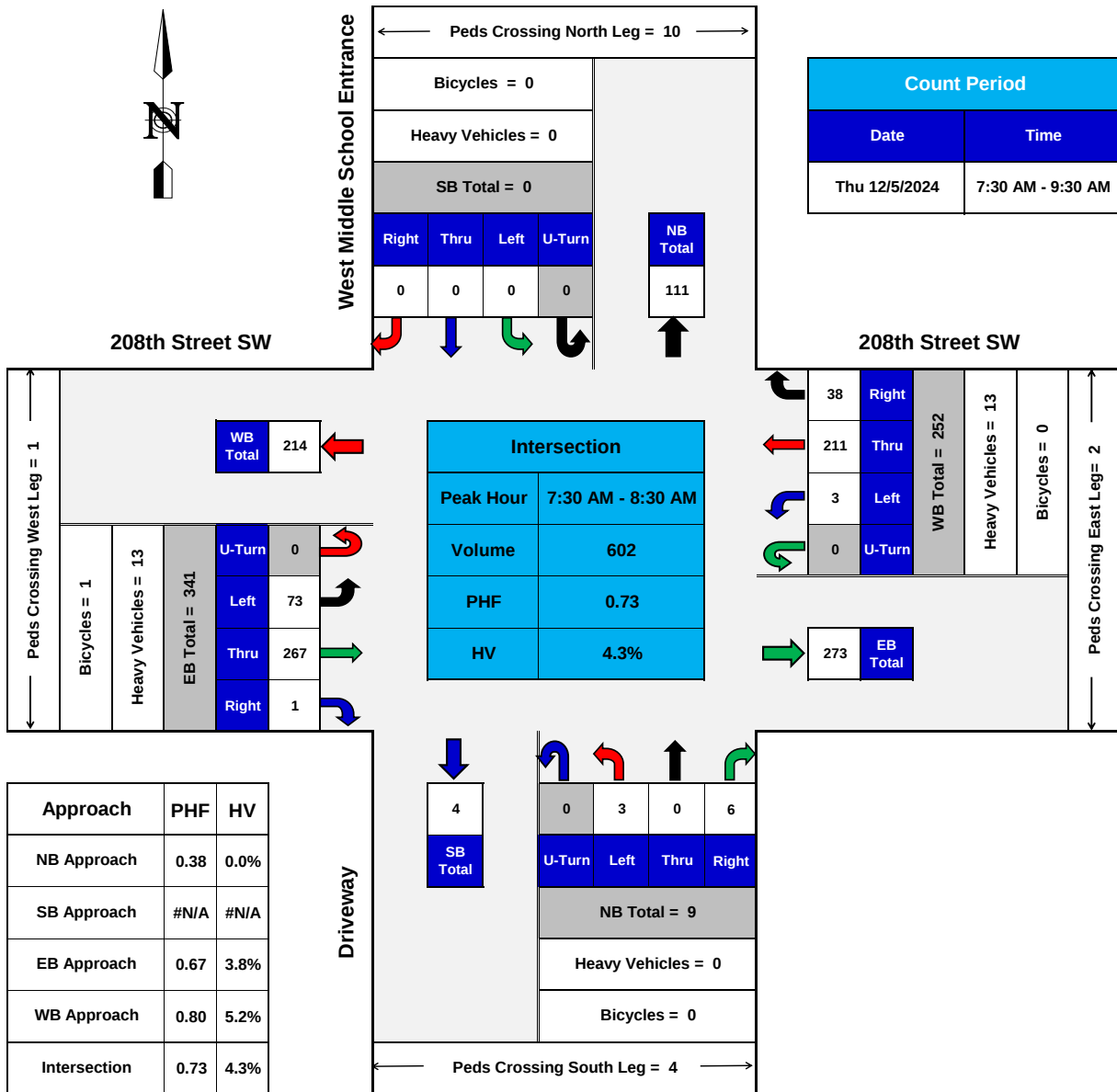
PHF = Peak Hour Factor
 HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY



West Middle School Entrance @ 208th Street SW

Lynnwood, WA



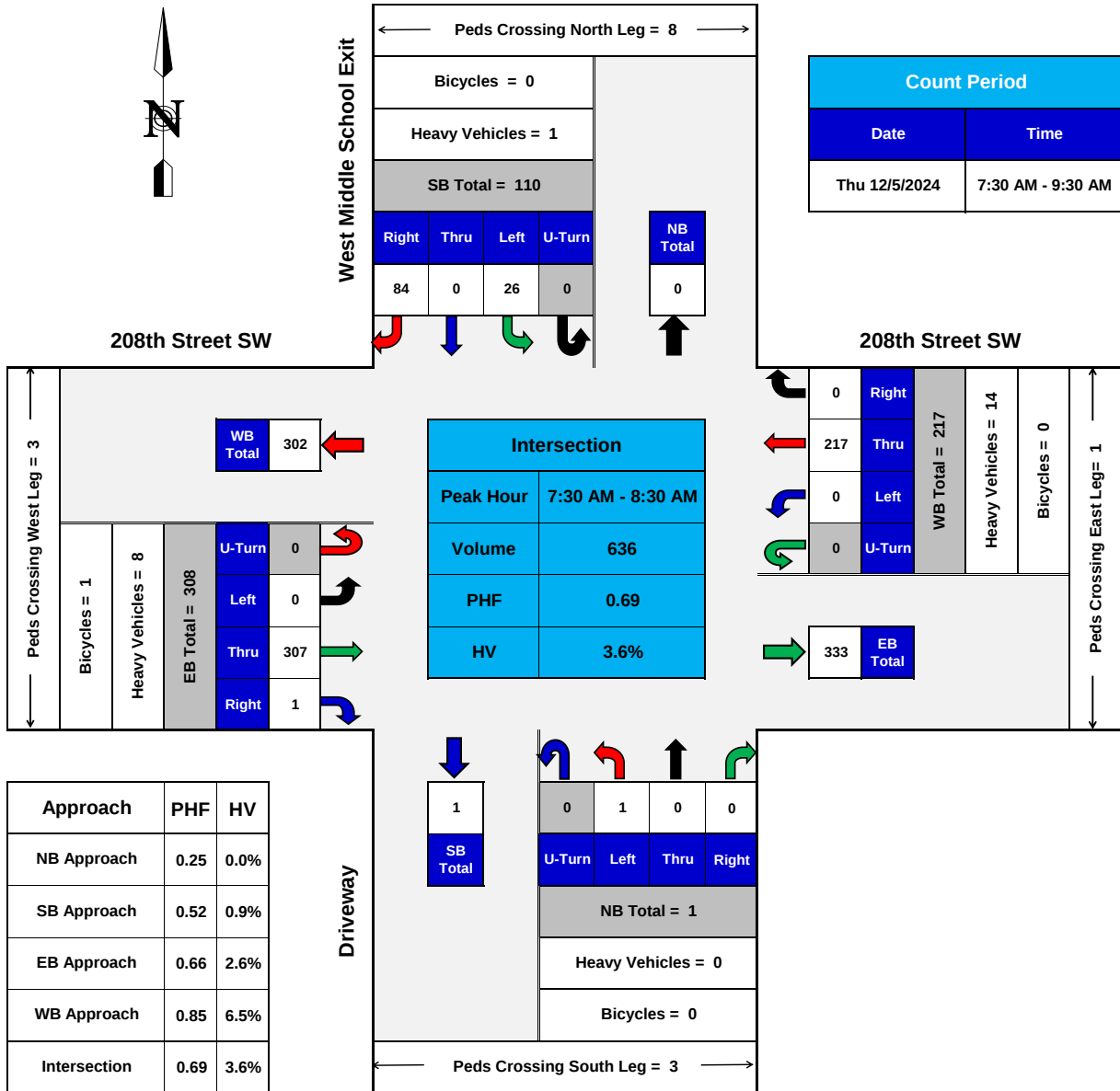
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



West Middle School Exit @ 208th Street SW

Lynnwood, WA



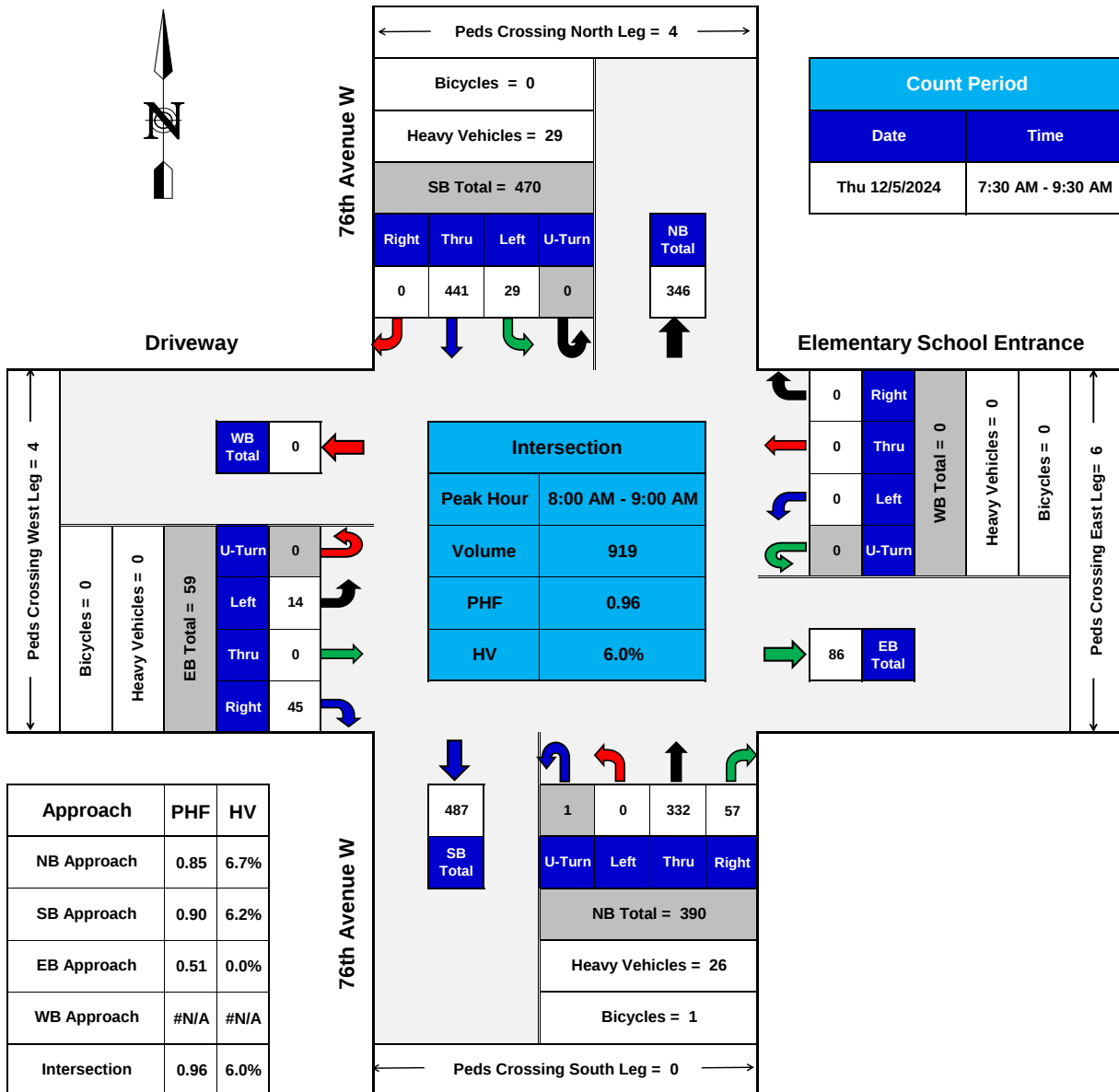
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ Elementary School Entrance

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

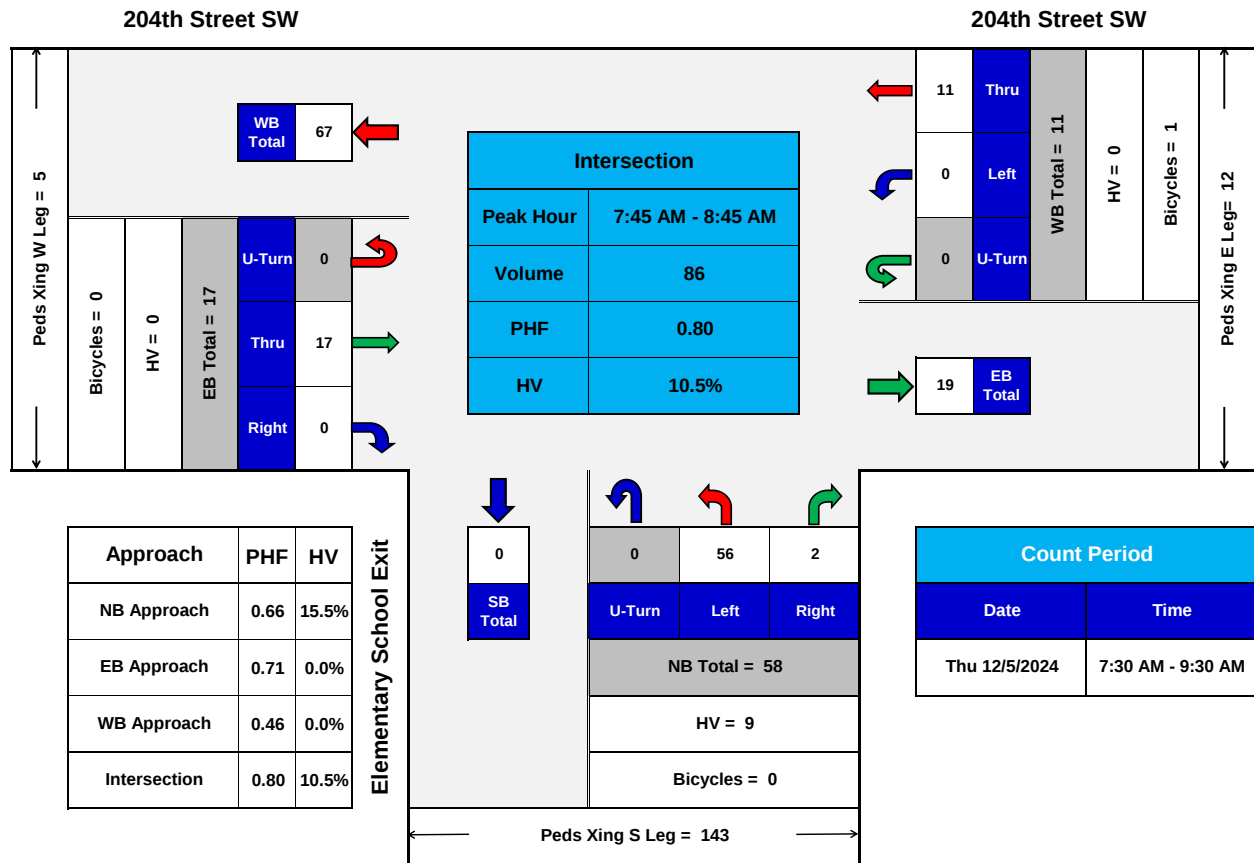
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY





Elementary School Exit @ 204th Street SW
Lynnwood, WA

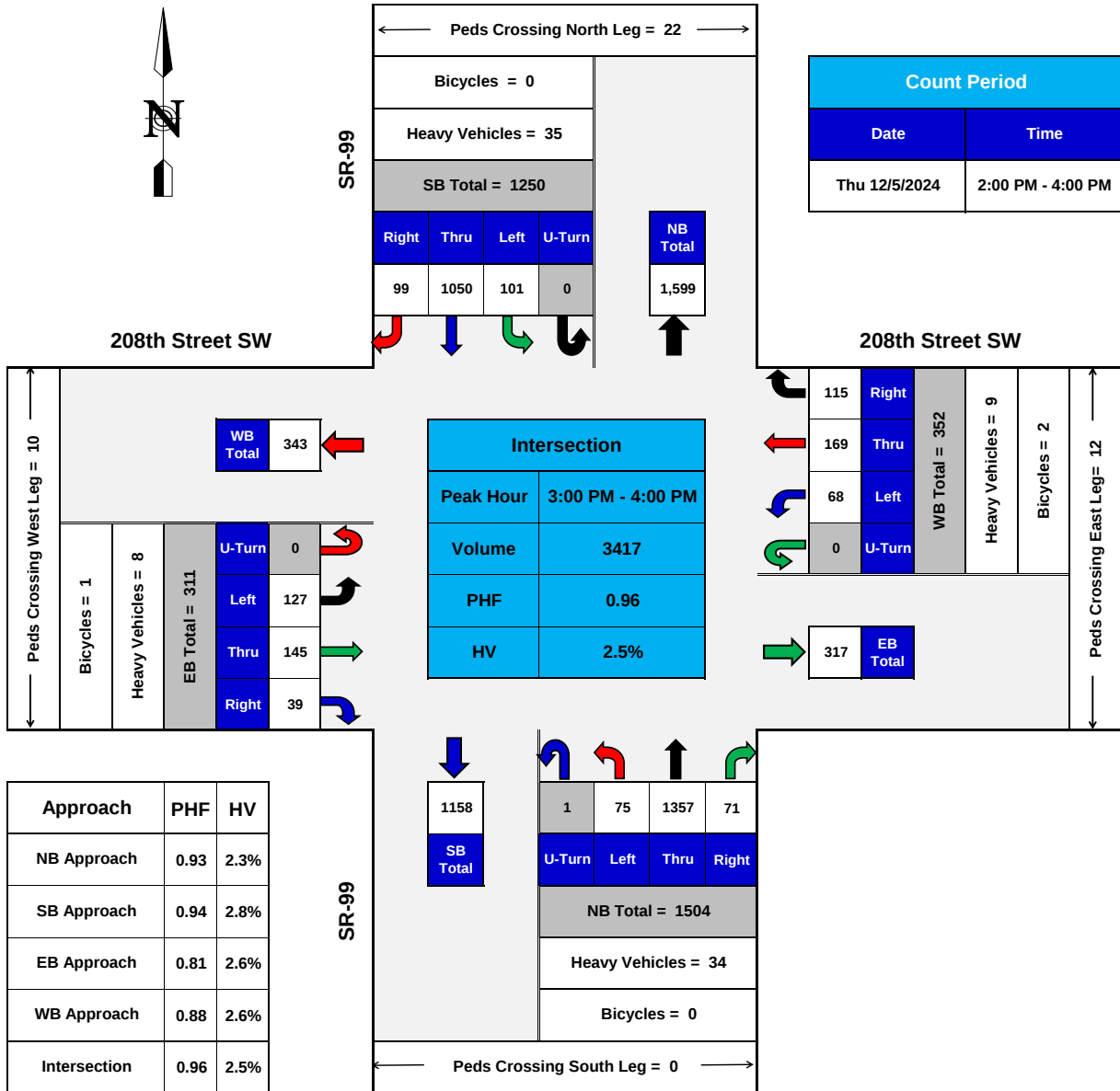


TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY



SR-99 @ 208th Street SW

Lynnwood, WA



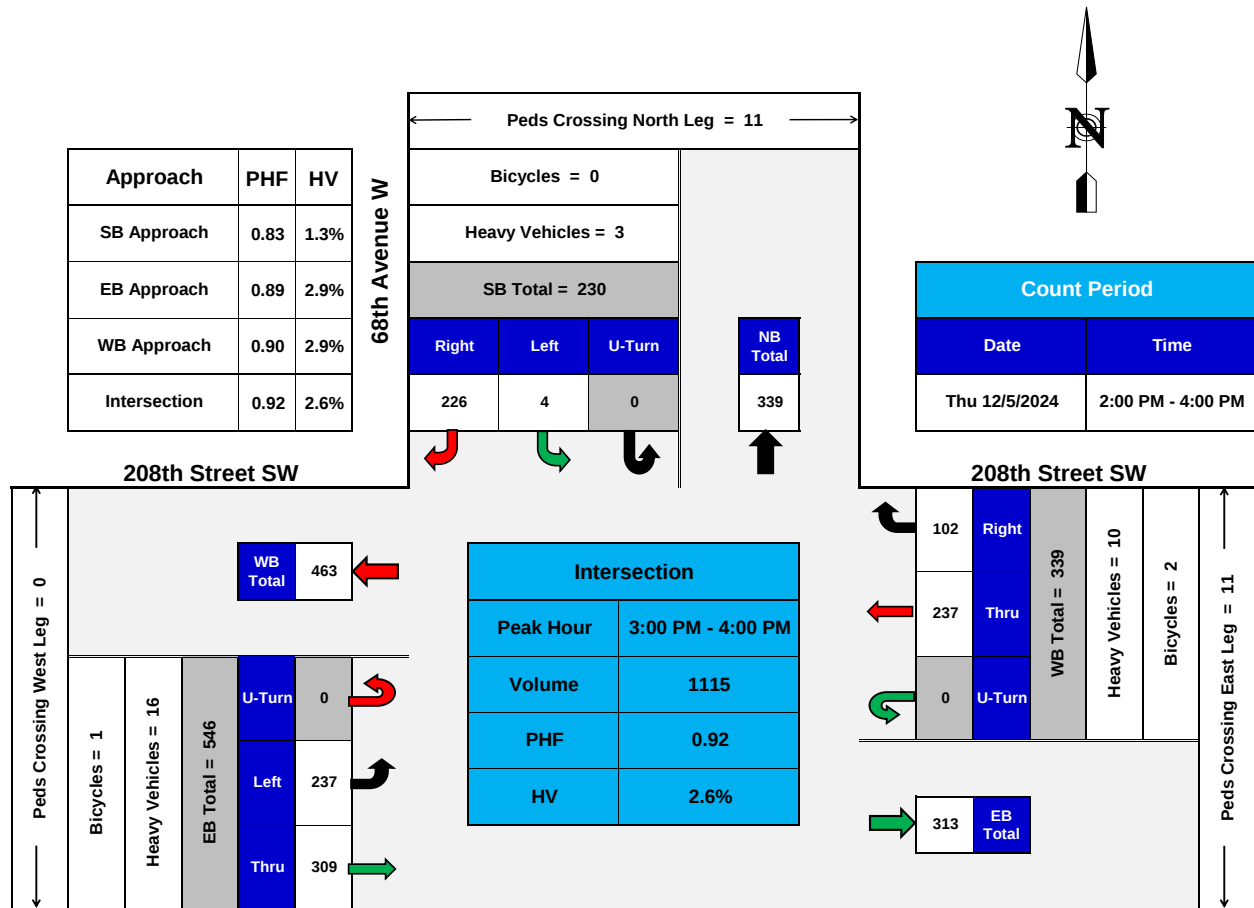
PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



68th Avenue W @ 208th Street SW
Lynnwood, WA



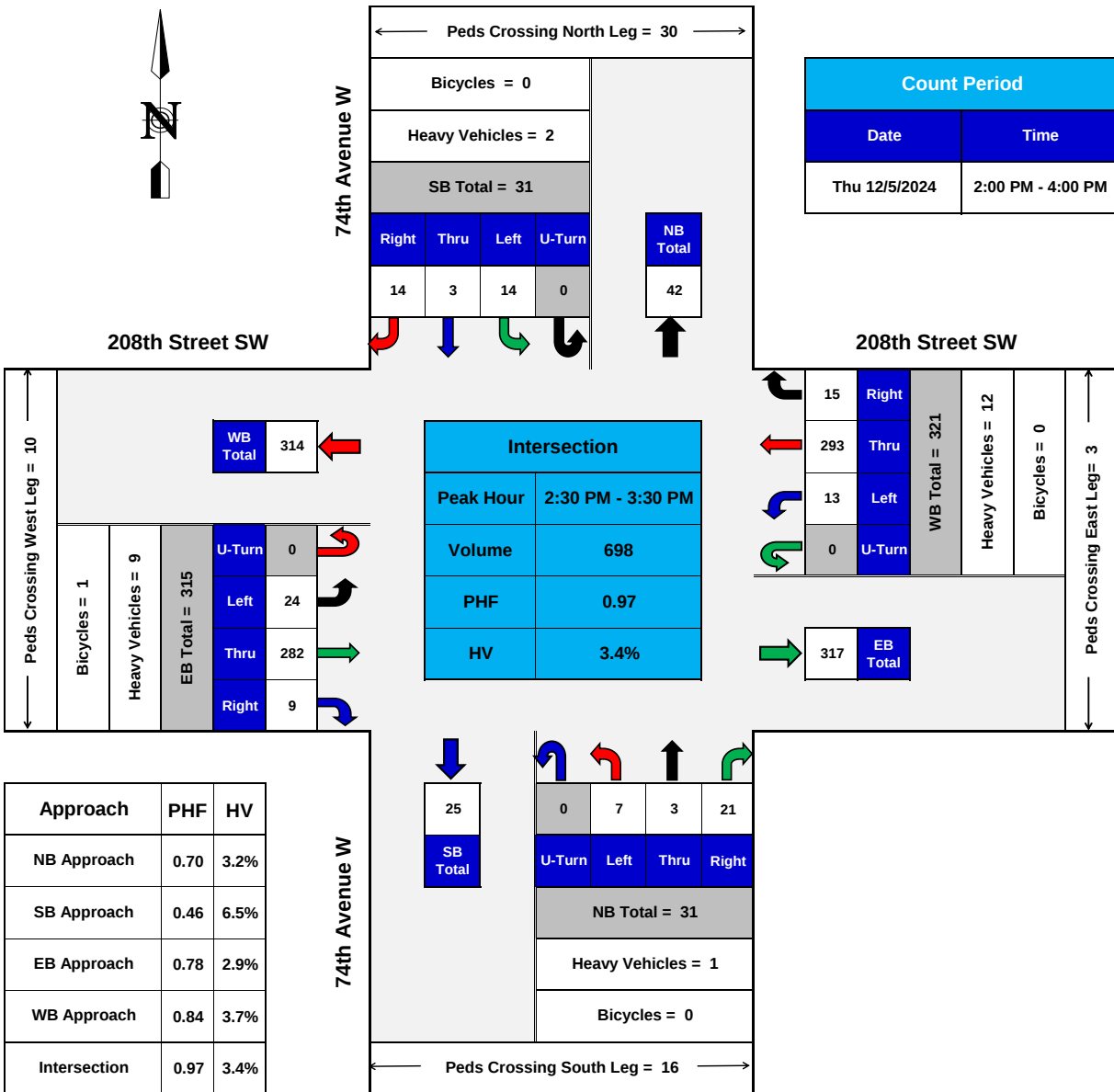
PHF = Peak Hour Factor
 HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY



74th Avenue W @ 208th Street SW

Lynnwood, WA



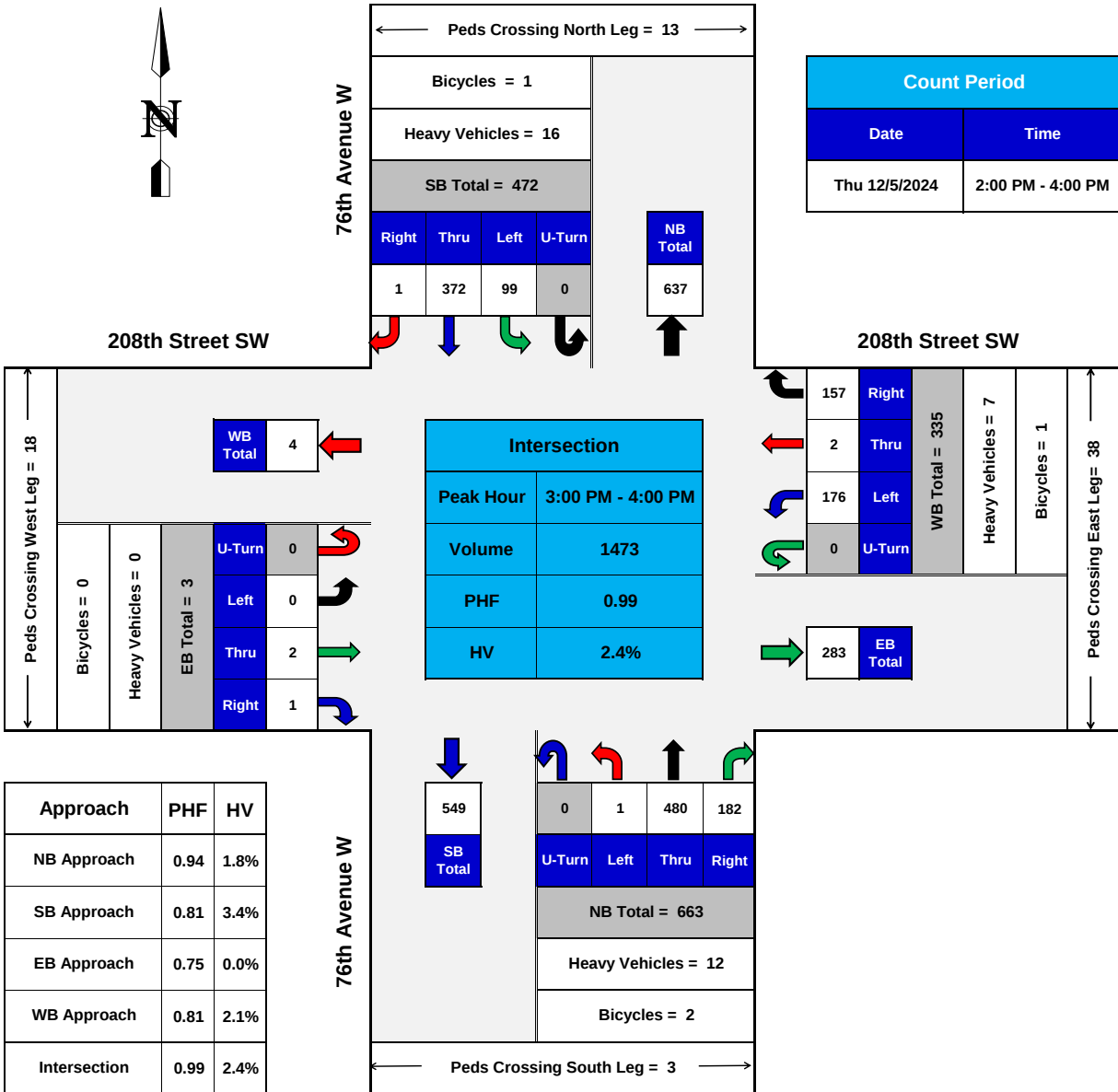
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 208th Street SW

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

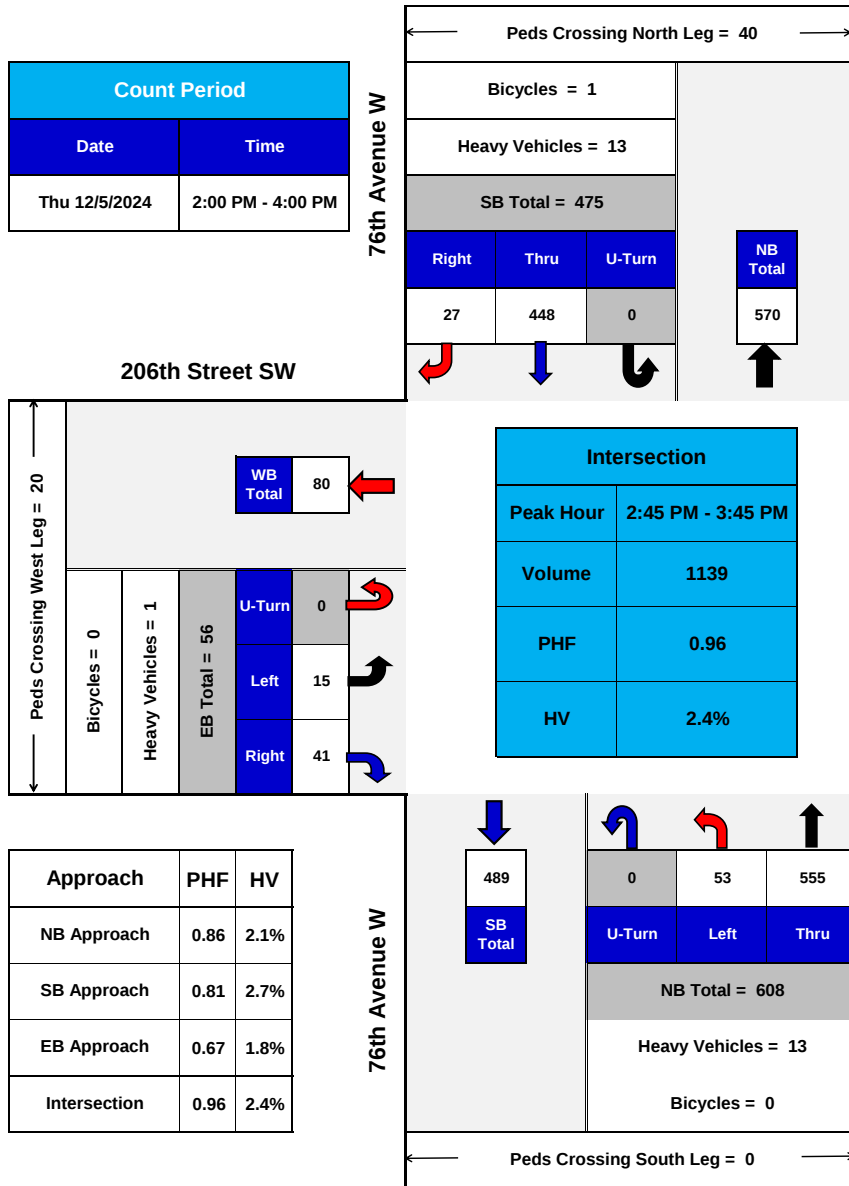
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 206th Street SW

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

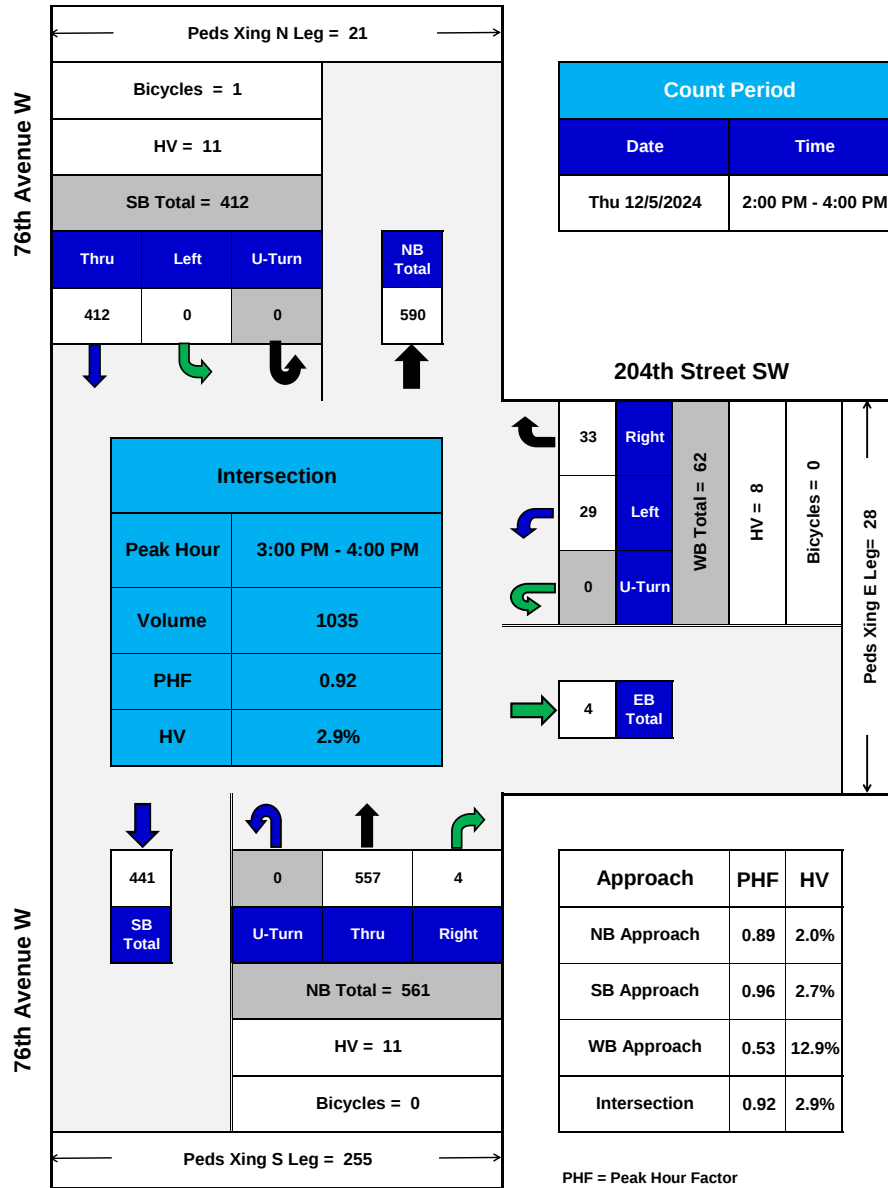
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 204th Street SW

Lynnwood, WA



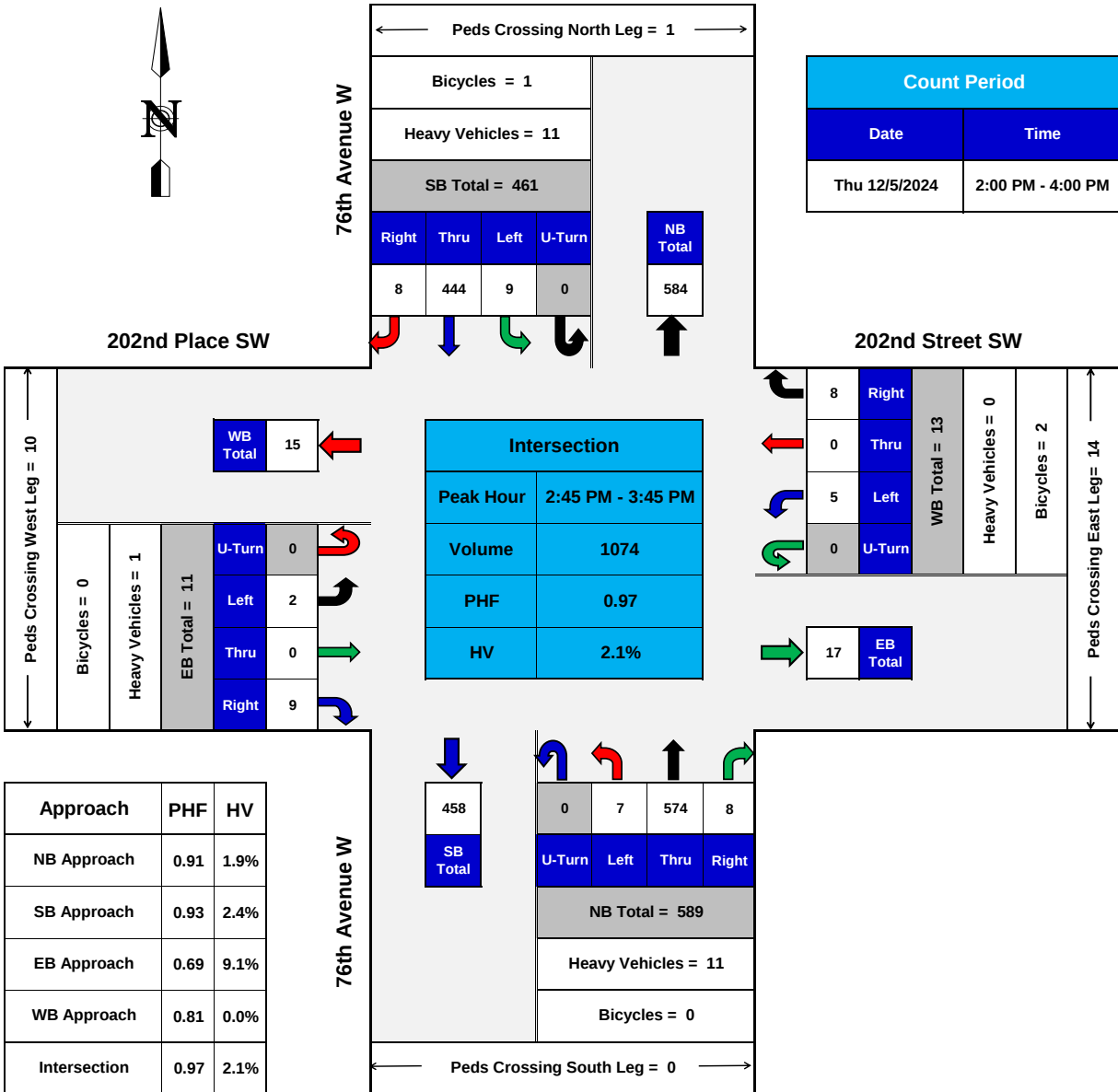
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 202nd Street SW/202nd Place SW

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

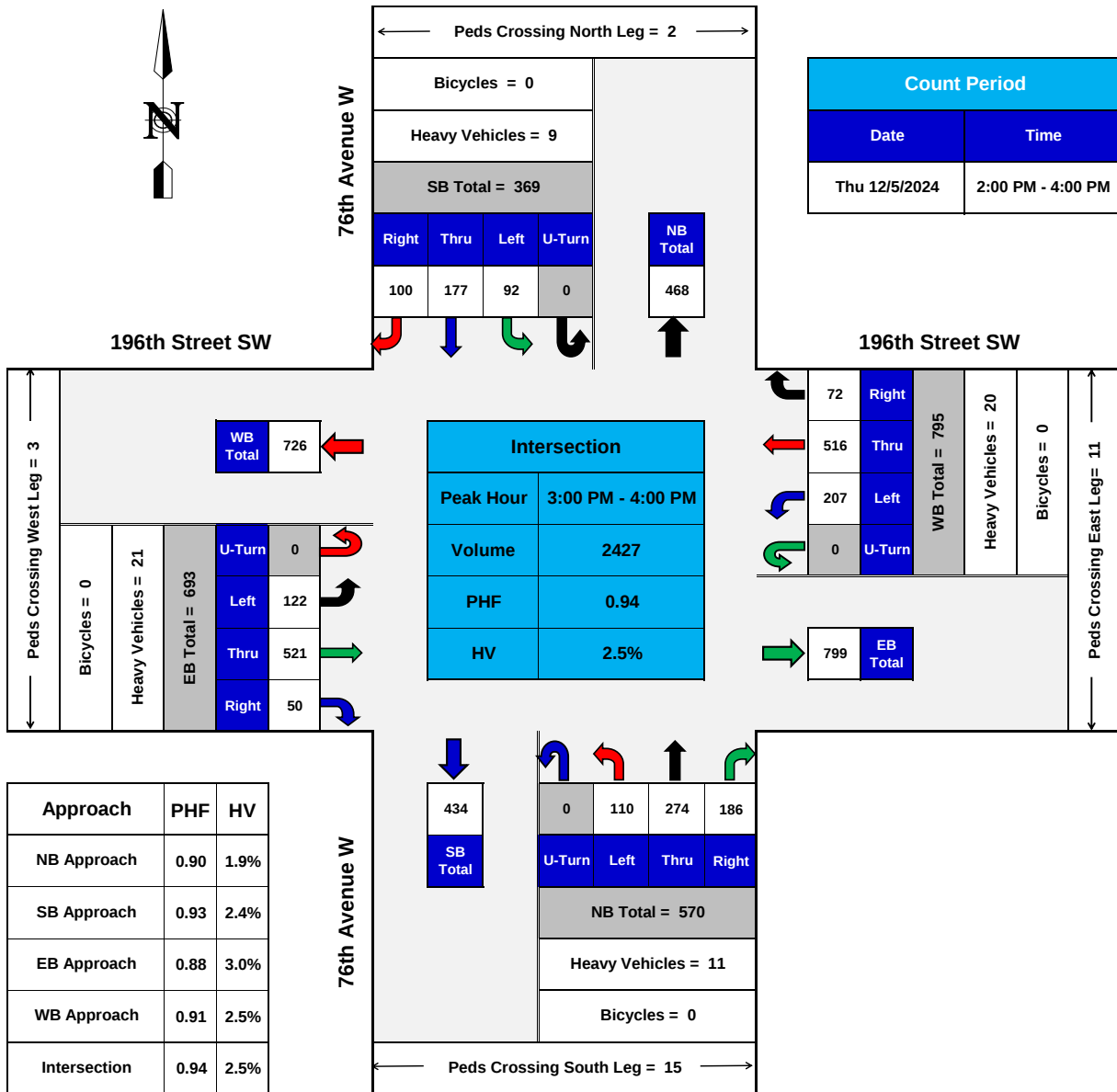
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ 196th Street SW

Lynnwood, WA

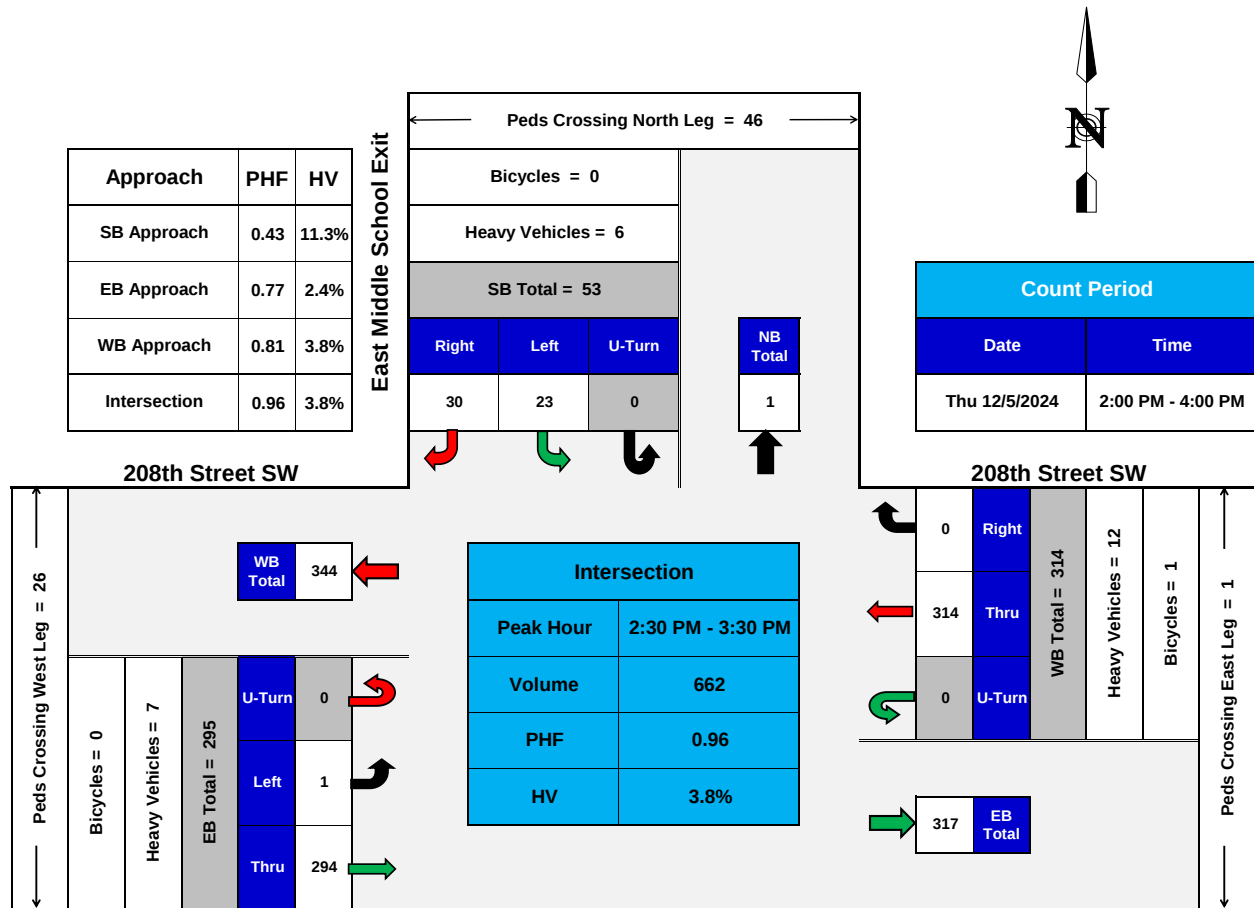


TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



East Middle School Exit @ 208th Street SW
Lynnwood, WA



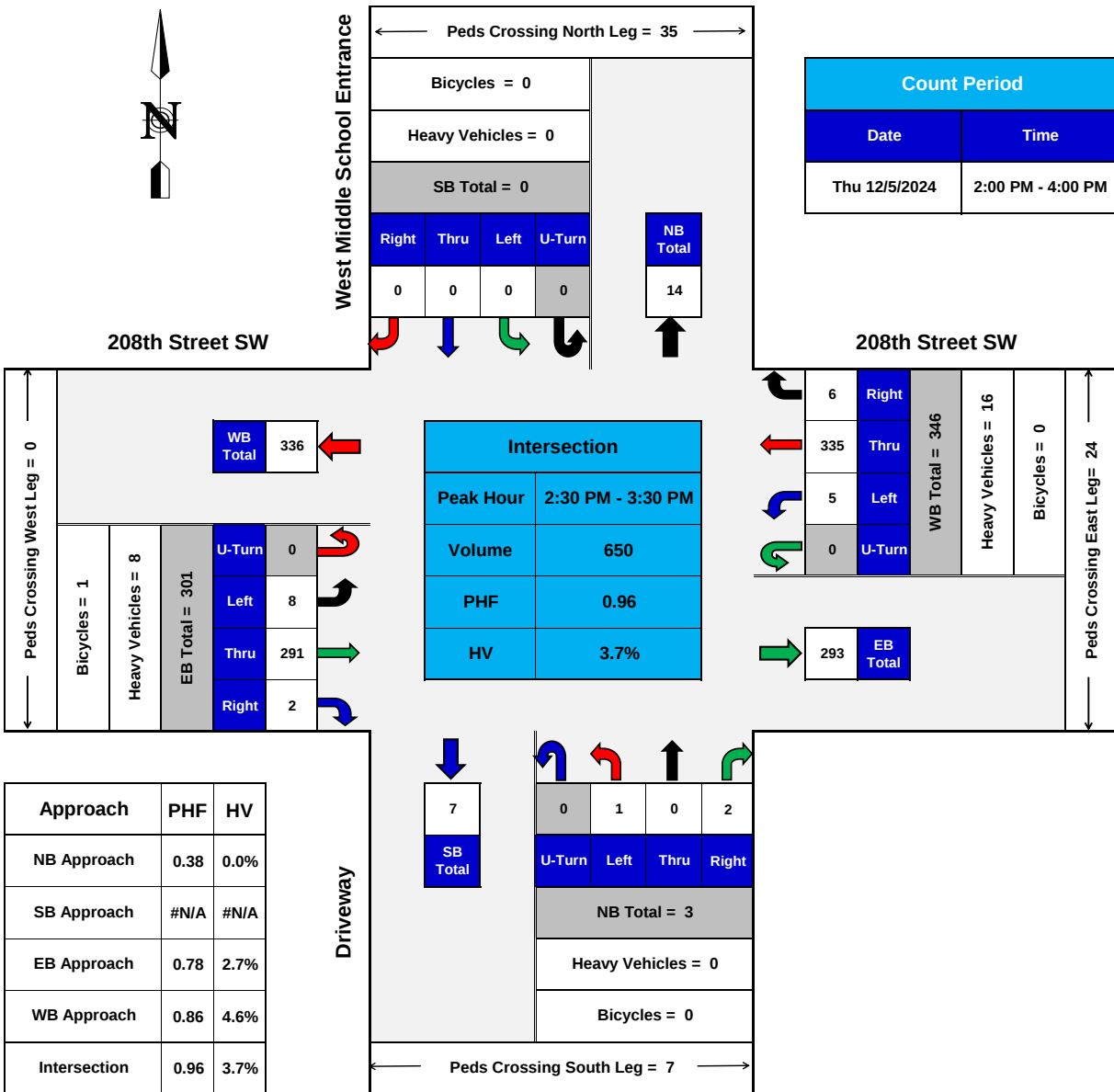
PHF = Peak Hour Factor
 HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY



West Middle School Entrance @ 208th Street SW

Lynnwood, WA



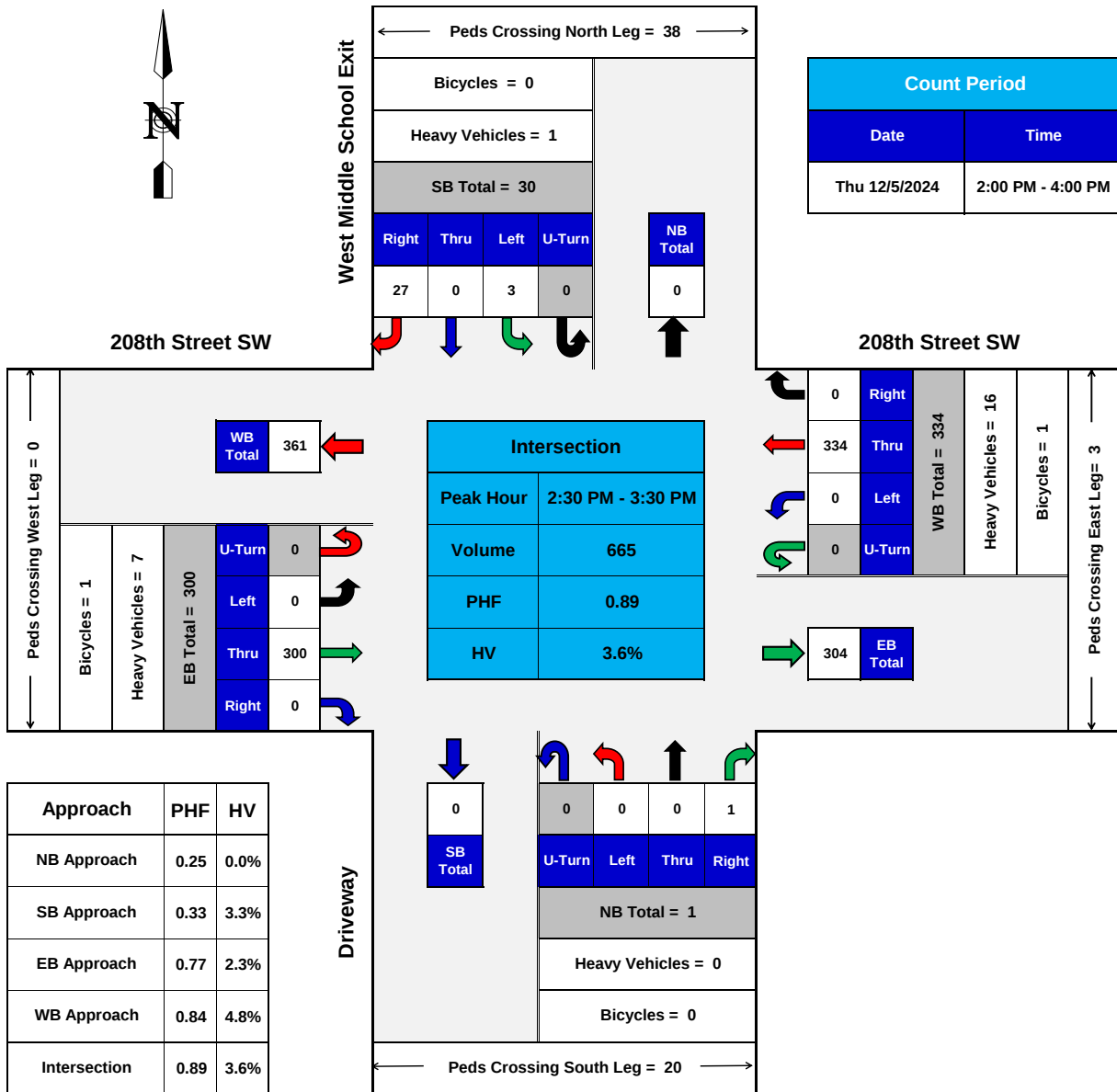
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



West Middle School Exit @ 208th Street SW

Lynnwood, WA



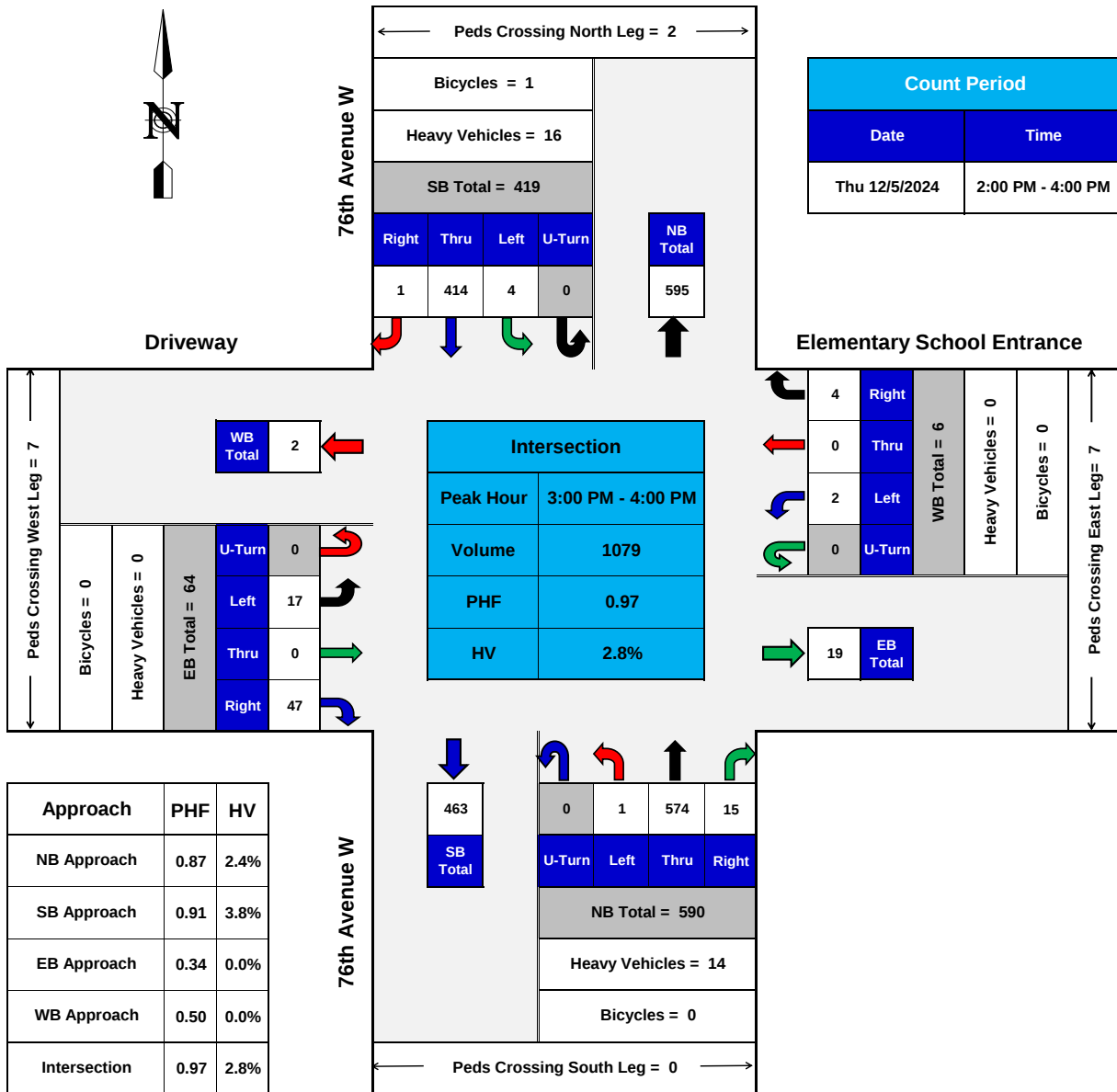
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



76th Avenue W @ Elementary School Entrance

Lynnwood, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY



APPENDIX C
TURNING MOVEMENT CALCULATIONS

1 SR-99 @ 208th St SW

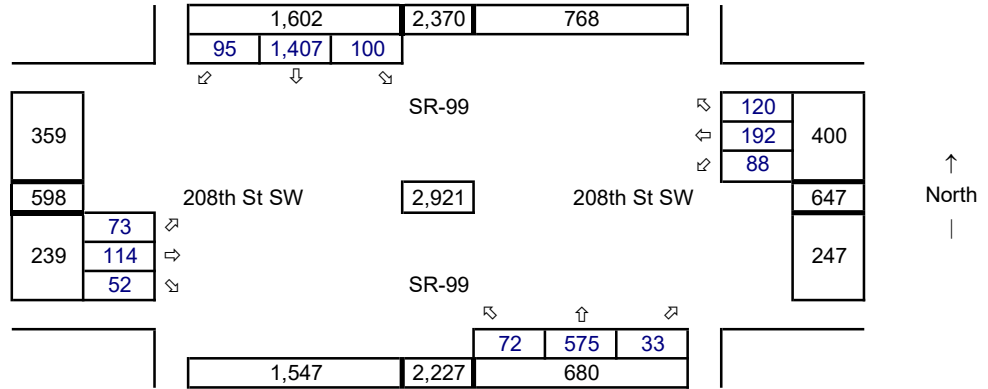
Synchro ID: 1

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

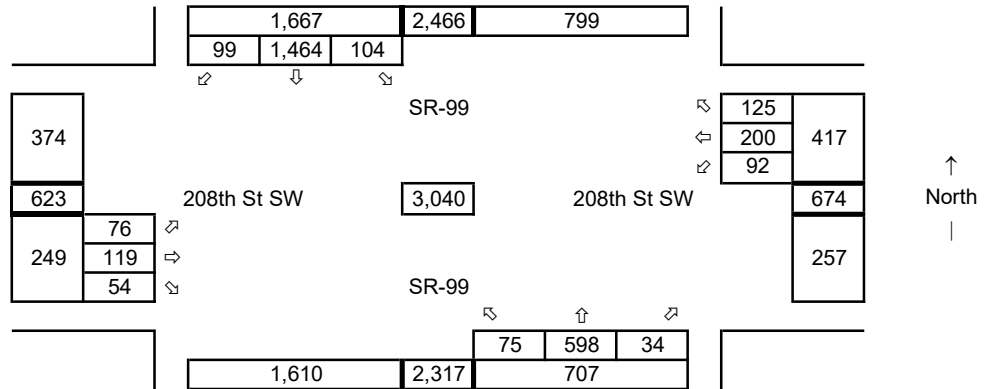
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1.0%

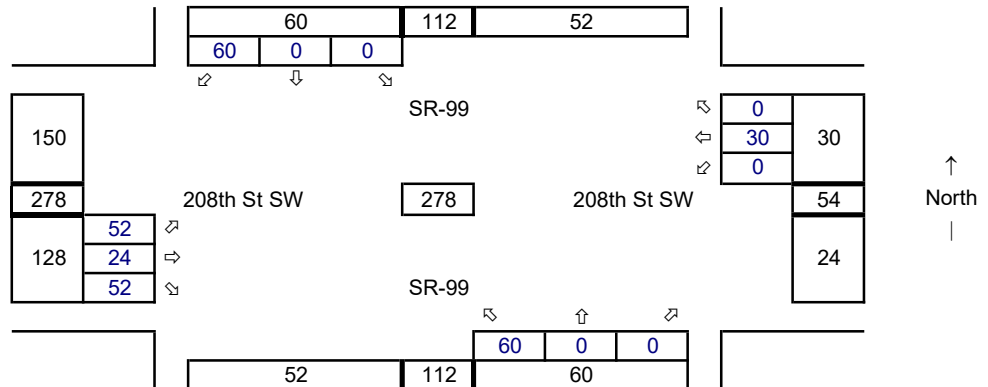
Years of Growth = 4

Total Growth = 1.0406



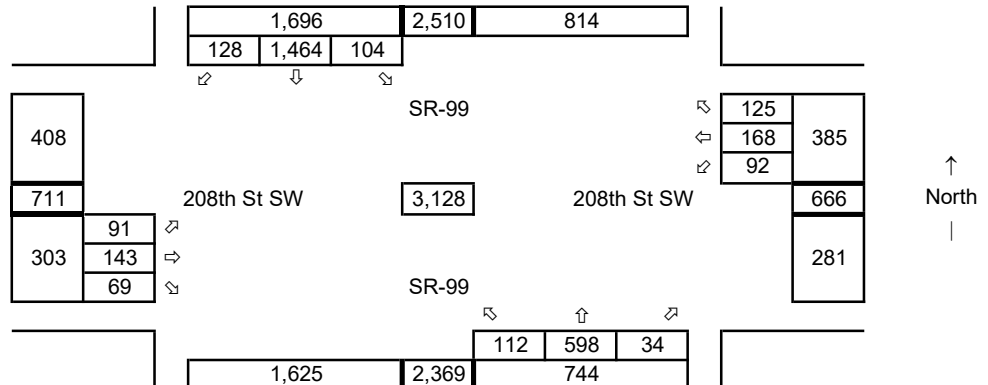
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

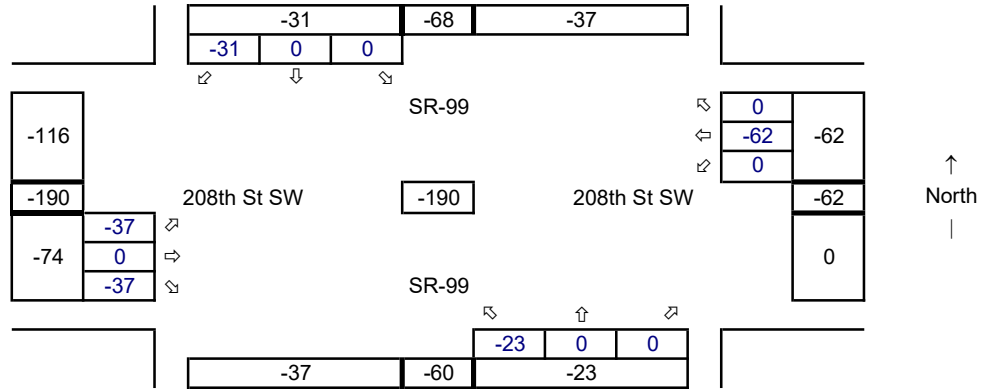
Average Weekday
AM Peak Hour



1 SR-99 @ 208th St SW

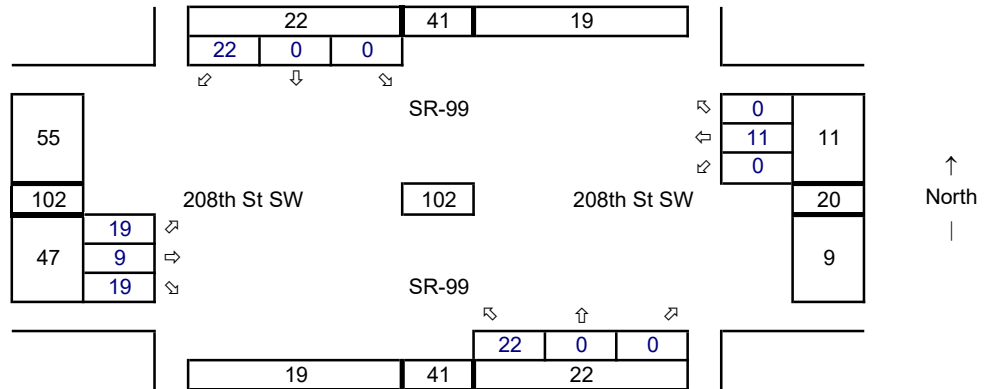
Re-Routed Project Trips

Average Weekday
AM Peak Hour



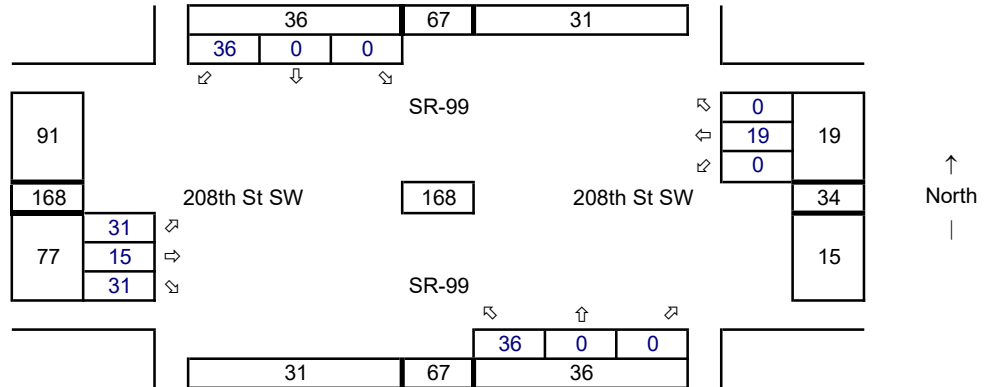
CPE Trips

Average Weekday
AM Peak Hour



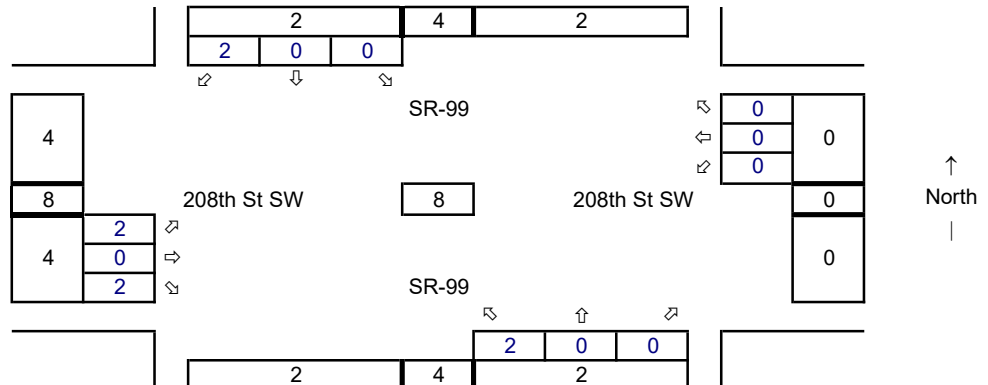
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



2 68th Ave W @ 208th St SW

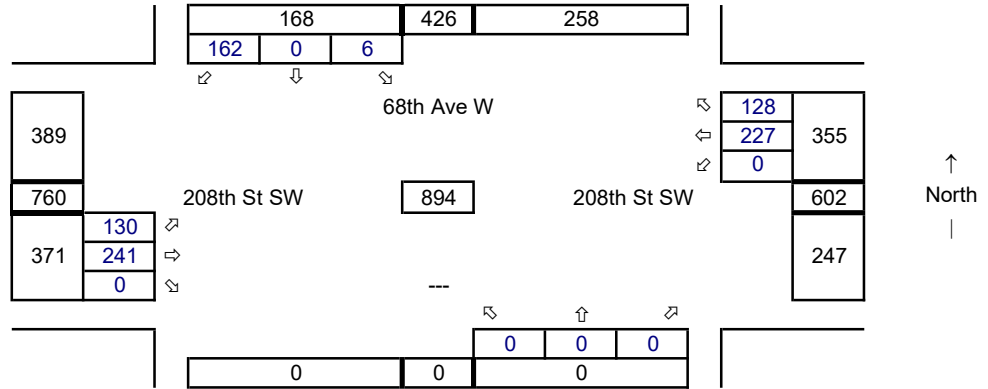
Synchro ID: 2

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

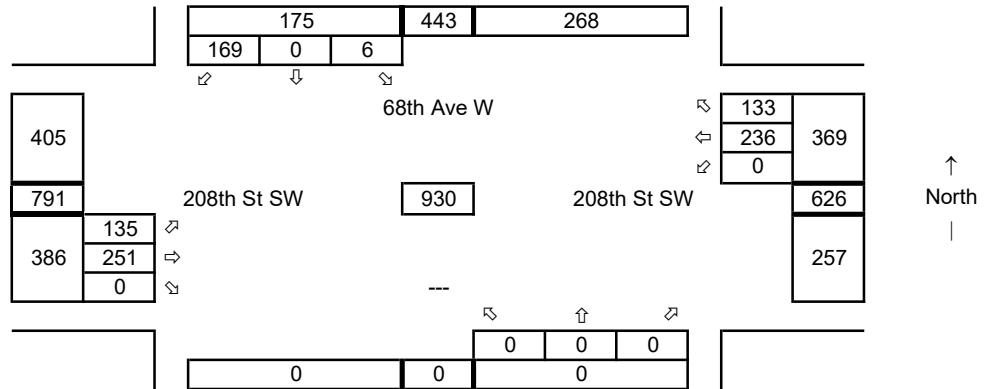
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

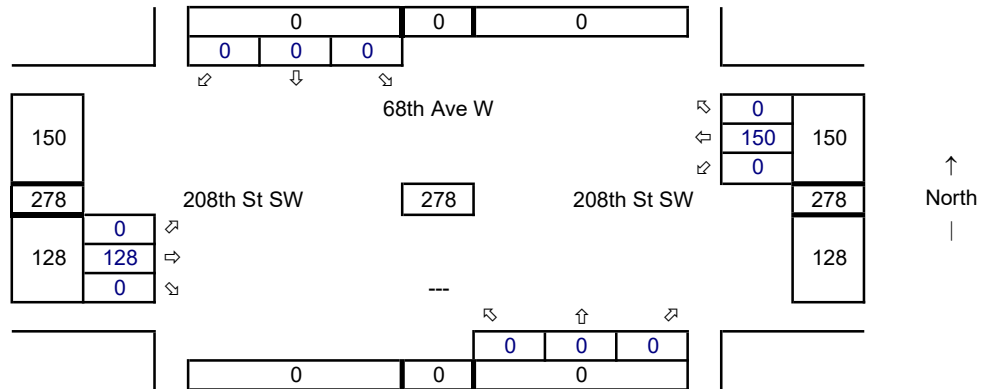
Years of Growth = 4

Total Growth = 1.0406



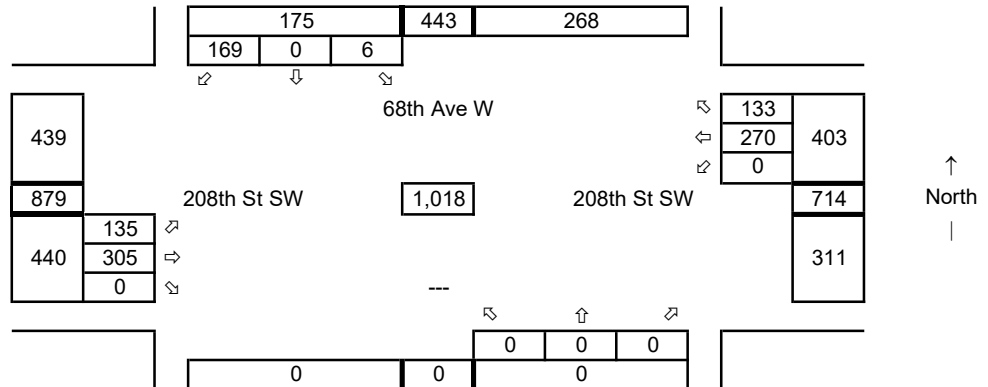
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

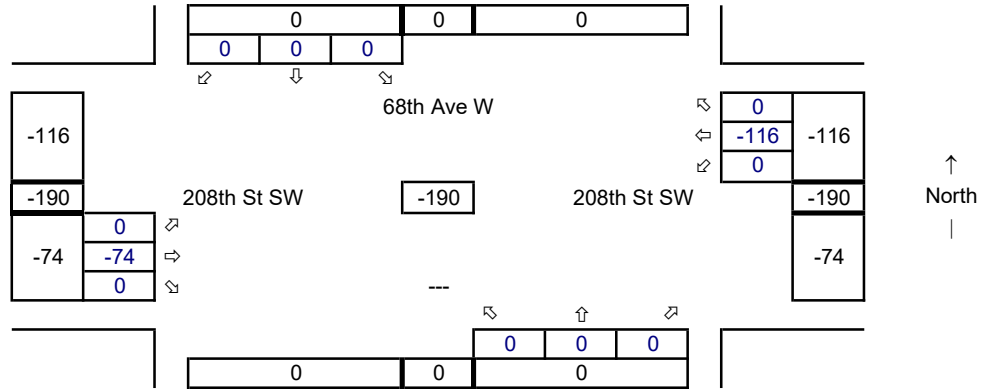
Average Weekday
AM Peak Hour



2 68th Ave W @ 208th St SW

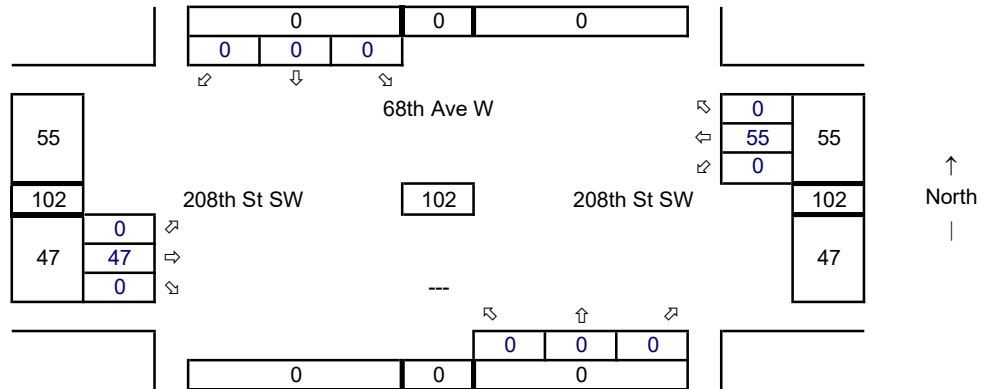
Re-Routed Project Trips

Average Weekday
AM Peak Hour



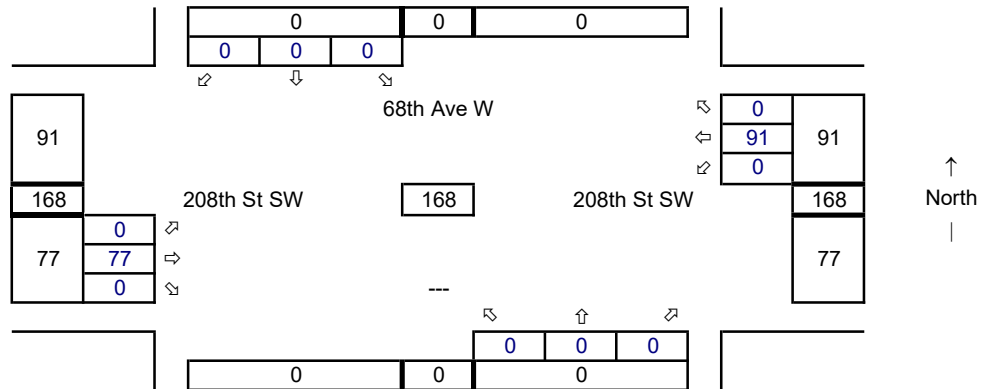
CPE Trips

Average Weekday
AM Peak Hour



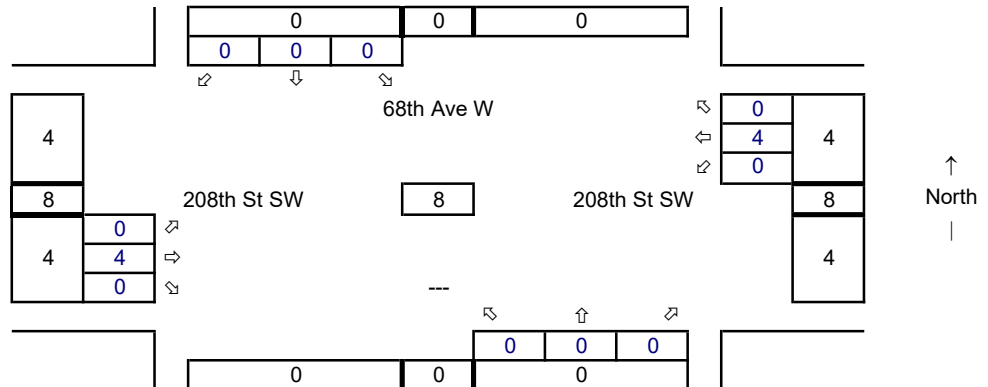
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



3 74th Ave W @ 208th St SW

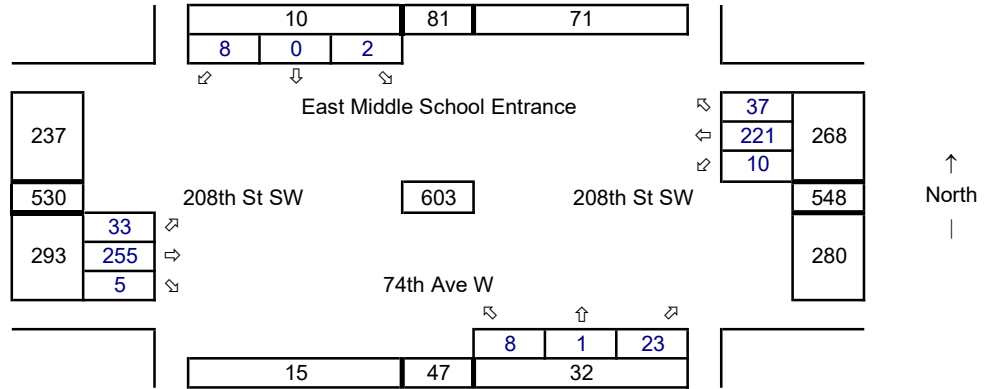
Synchro ID: 3

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

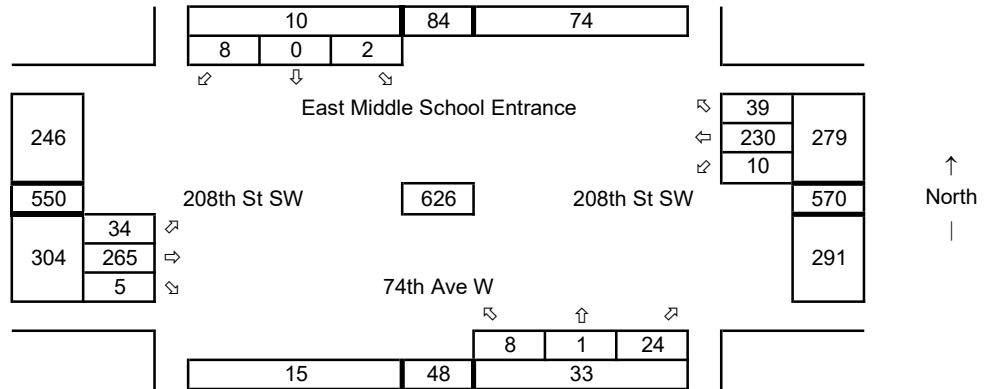
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

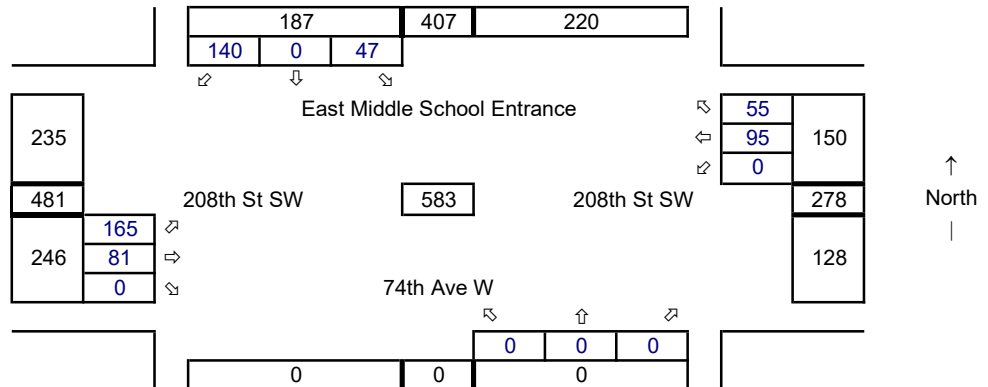
Years of Growth = 4

Total Growth = 1.0406



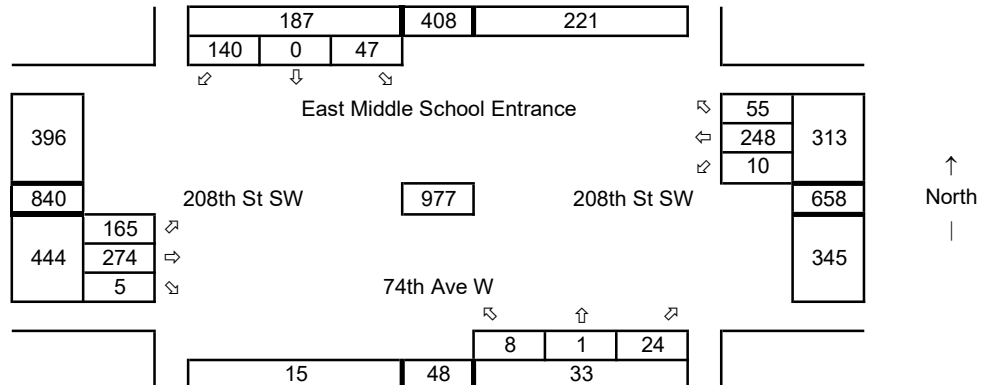
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

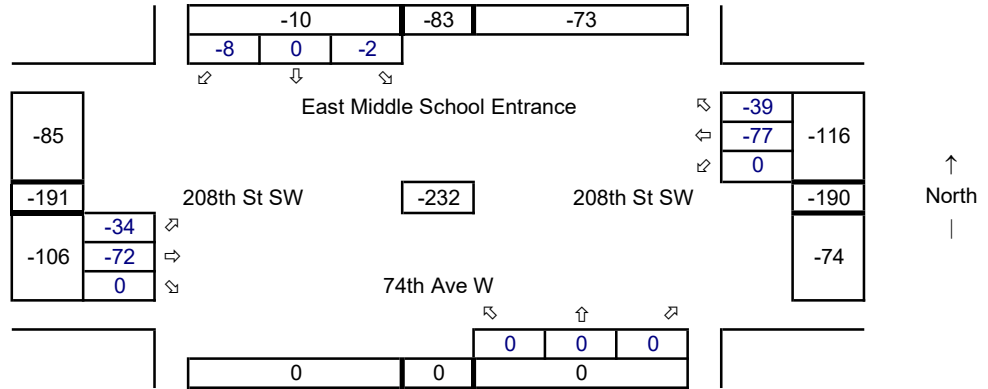
Average Weekday
AM Peak Hour



3 74th Ave W @ 208th St SW

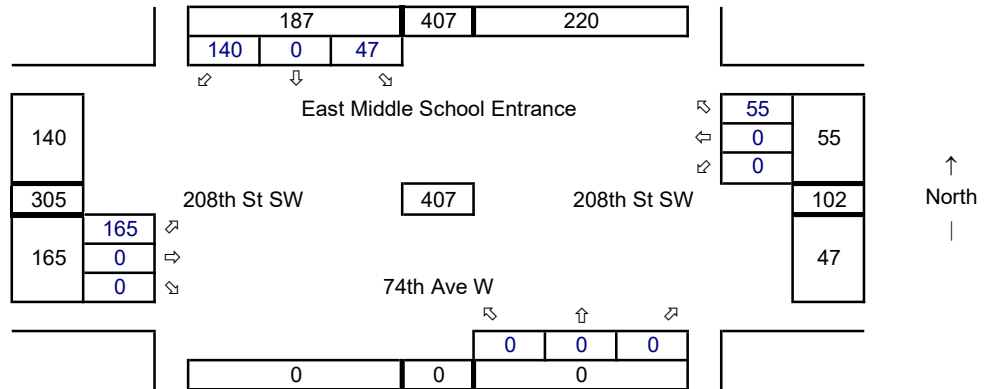
Re-Routed Project Trips

Average Weekday
AM Peak Hour



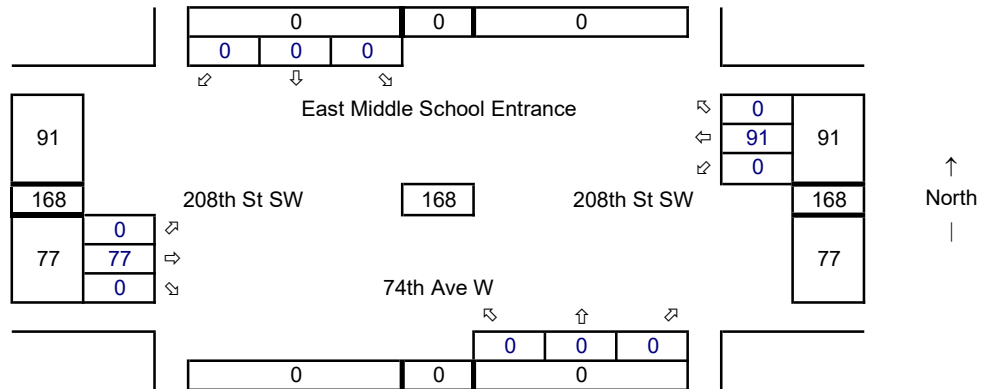
CPE Trips

Average Weekday
AM Peak Hour



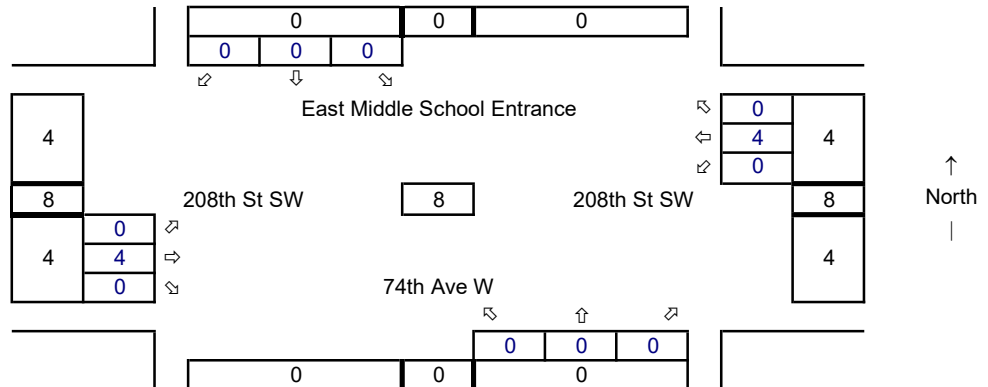
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



4 76th Ave W @ 208th St SW

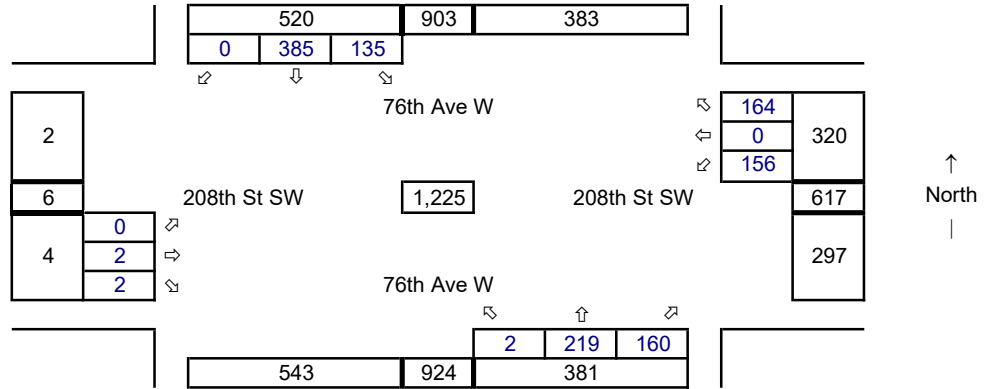
Synchro ID: 4

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

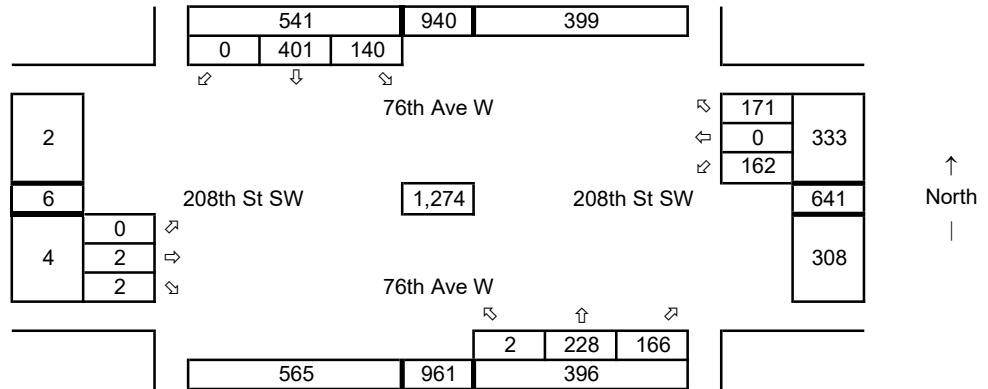
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

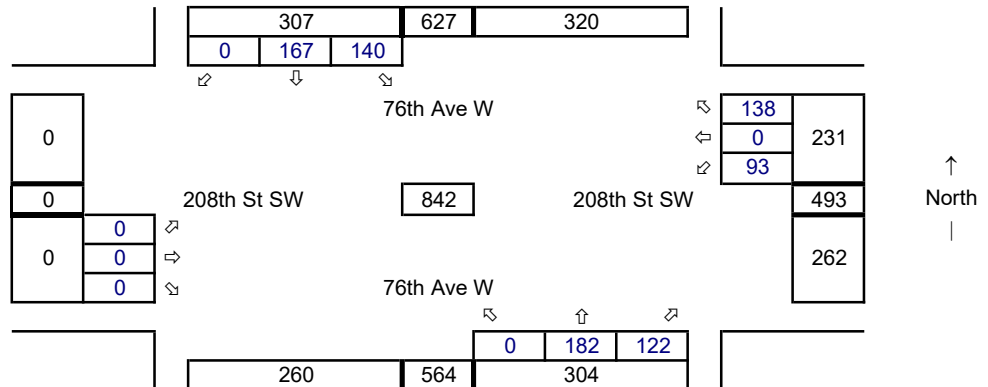
Years of Growth = 4

Total Growth = 1.0406



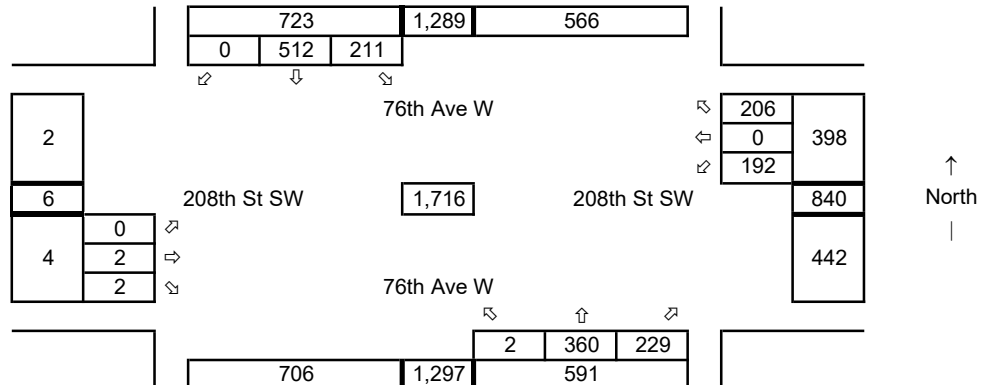
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

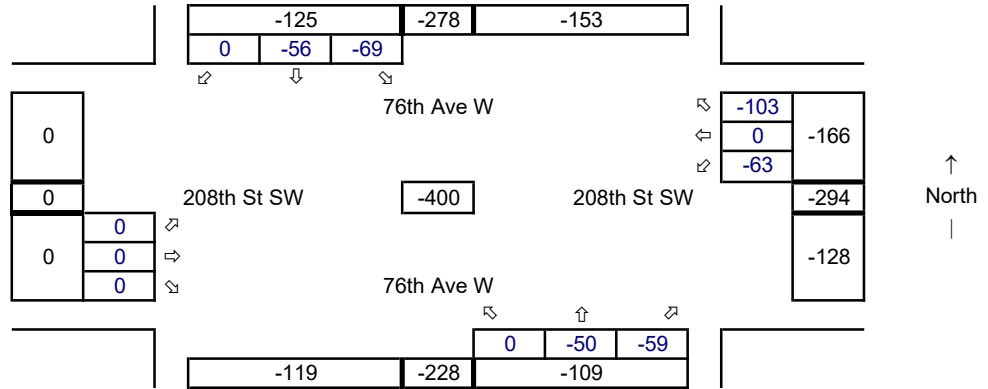
Average Weekday
AM Peak Hour



4 76th Ave W @ 208th St SW

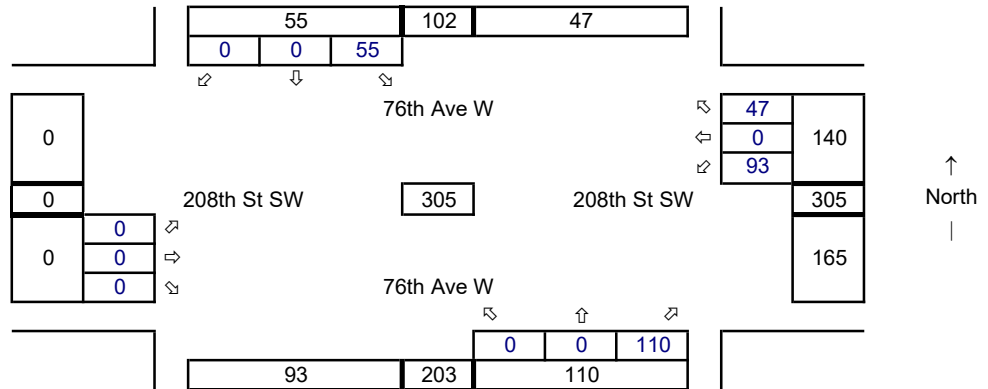
Re-Routed Project Trips

Average Weekday
AM Peak Hour



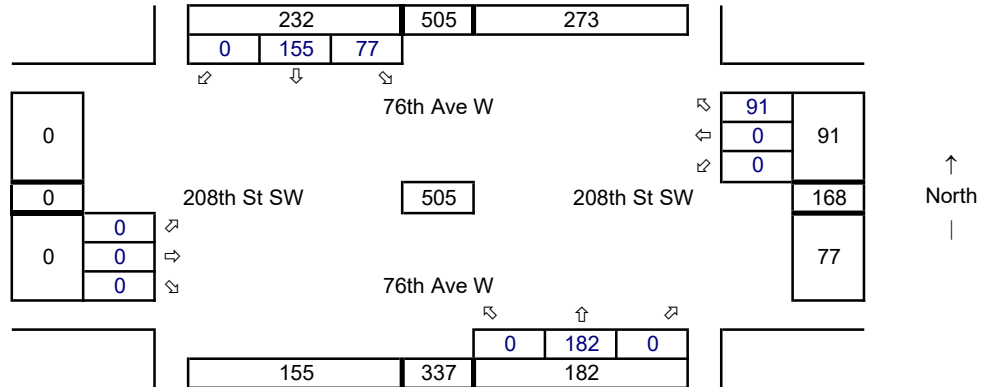
CPE Trips

Average Weekday
AM Peak Hour



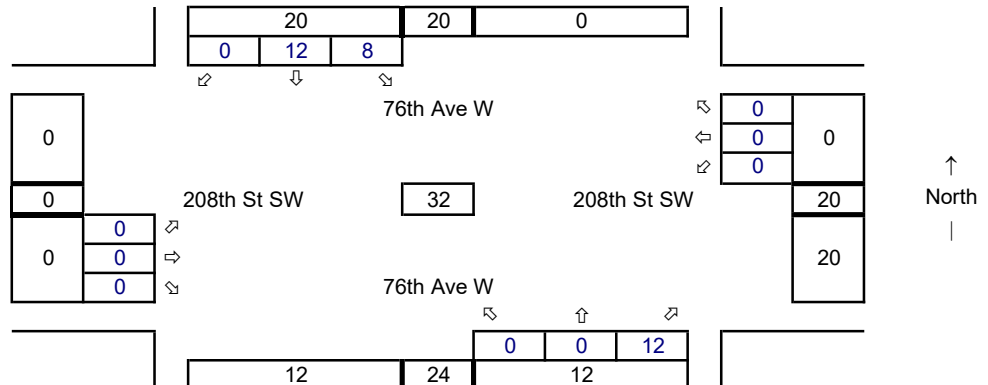
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



5 76th Ave W @ 206th St SW

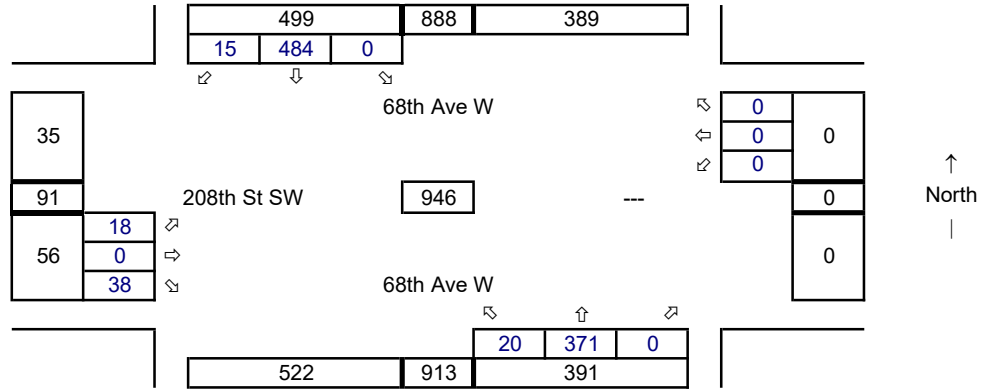
Synchro ID: 5

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

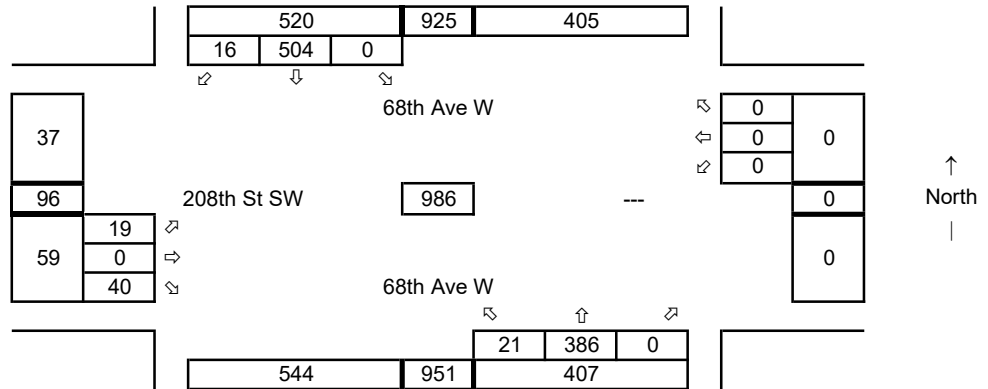
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

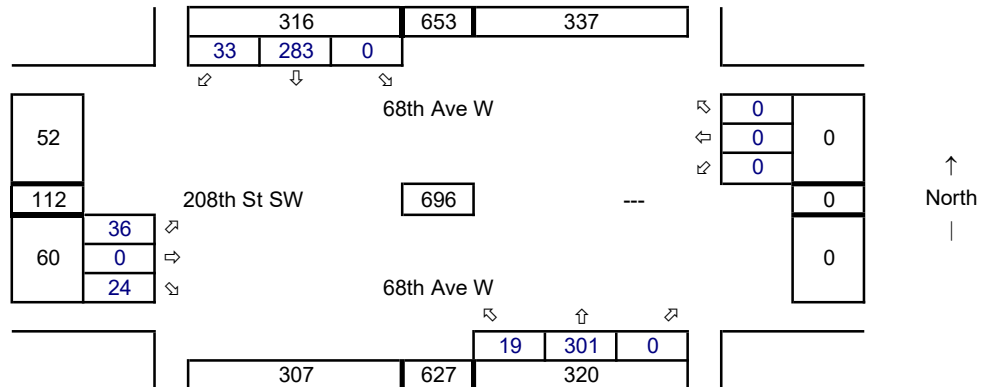
Years of Growth = 4

Total Growth = 1.0406



Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

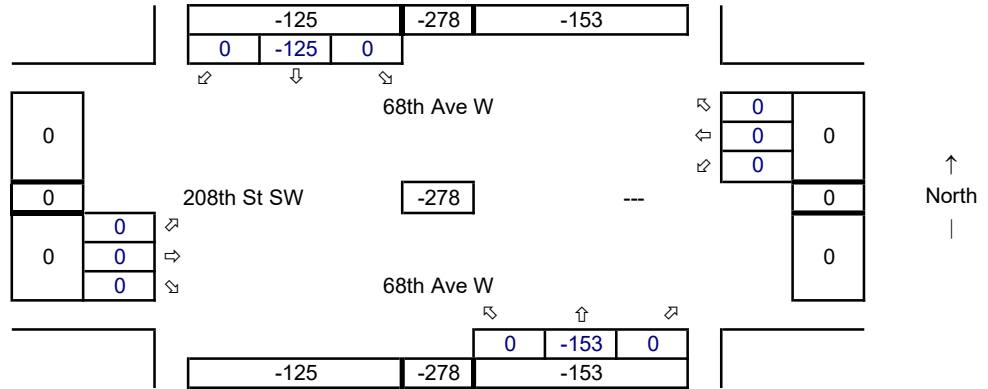
Average Weekday
AM Peak Hour



5 76th Ave W @ 206th St SW

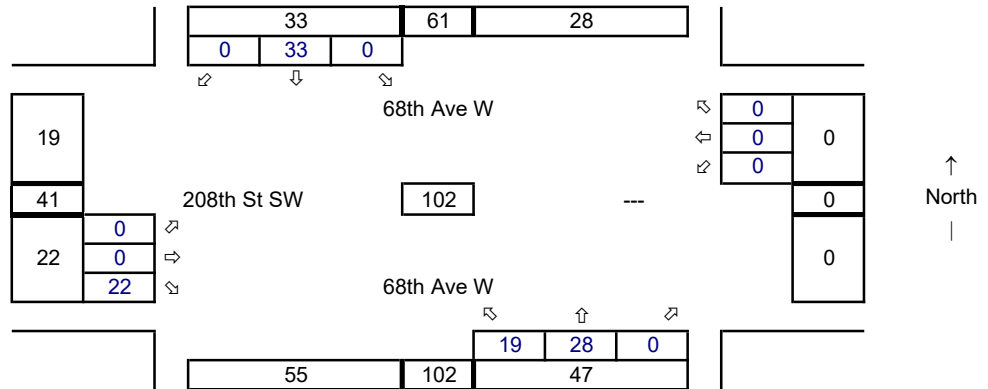
Re-Routed Project Trips

Average Weekday
AM Peak Hour



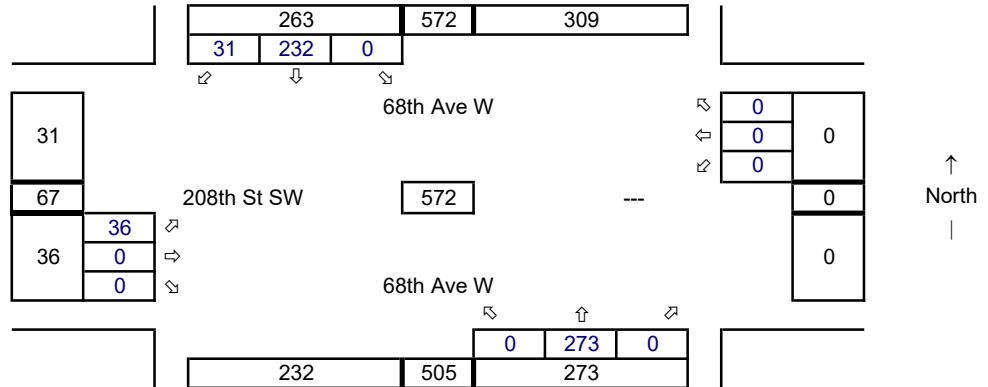
CPE Trips

Average Weekday
AM Peak Hour



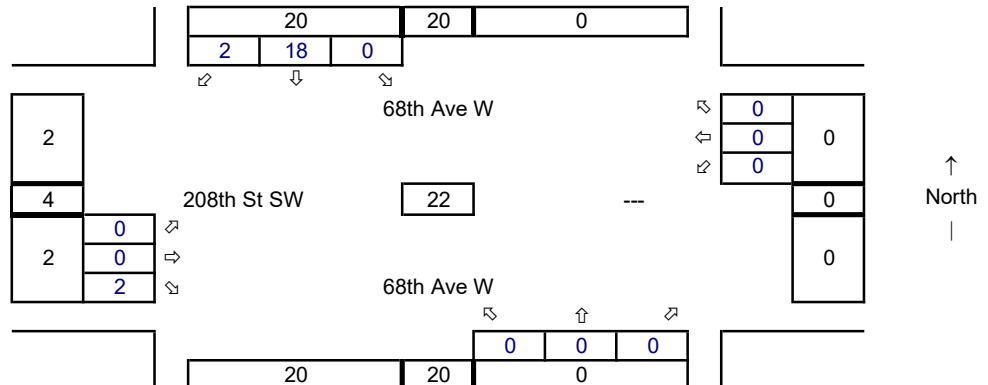
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



6 76th Ave W @ 204th St SW

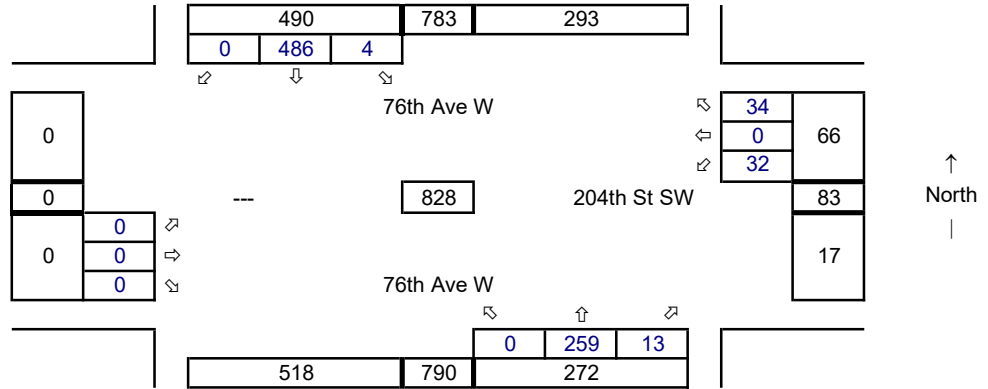
Synchro ID: 6

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

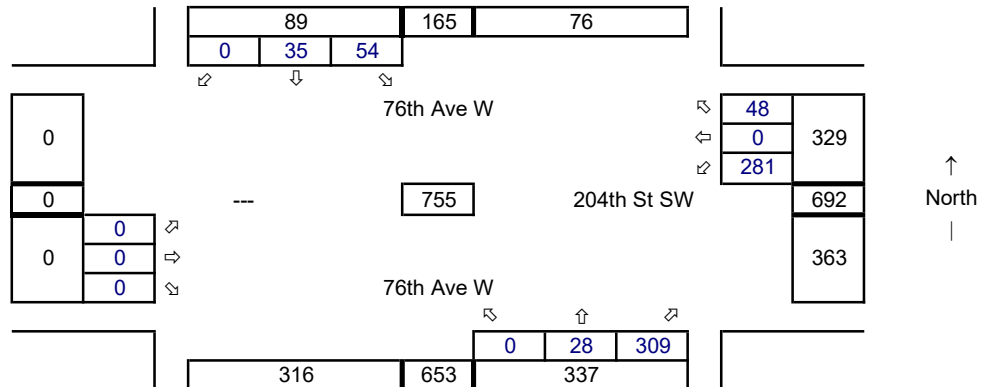
Years of Growth = 4

Total Growth = 1.0406



Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

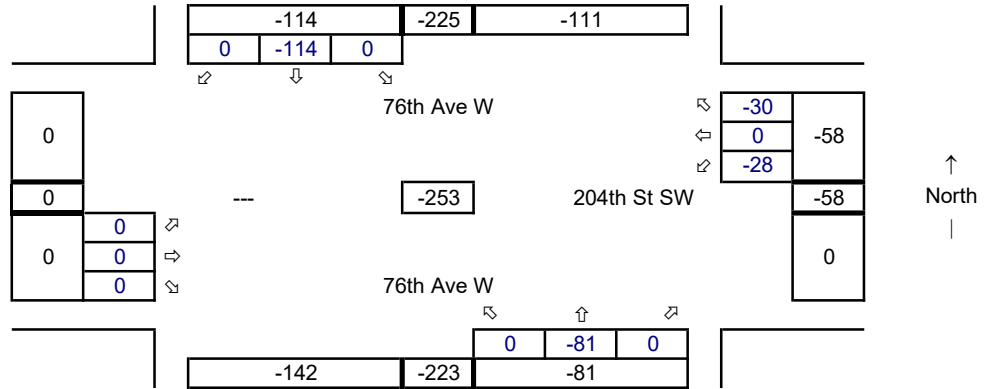
Average Weekday
AM Peak Hour



6 76th Ave W @ 204th St SW

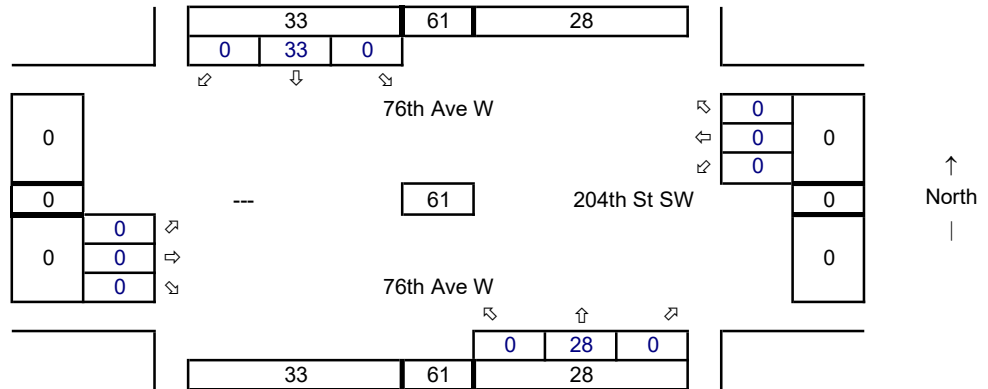
Re-Routed Project Trips

Average Weekday
AM Peak Hour



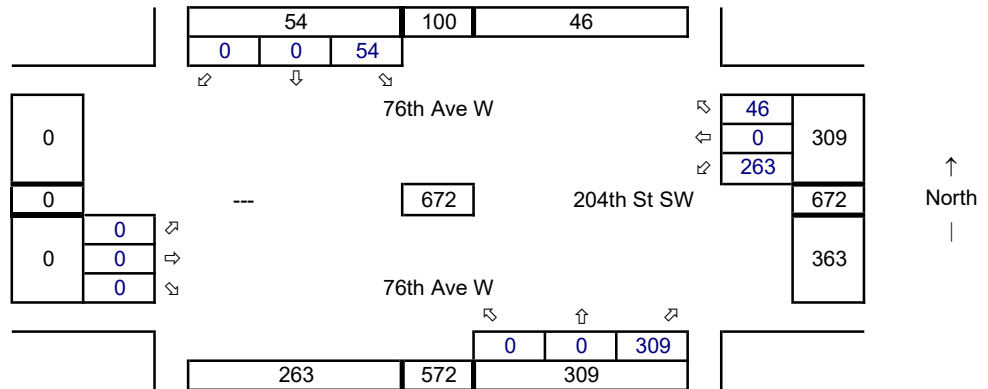
CPE Trips

Average Weekday
AM Peak Hour



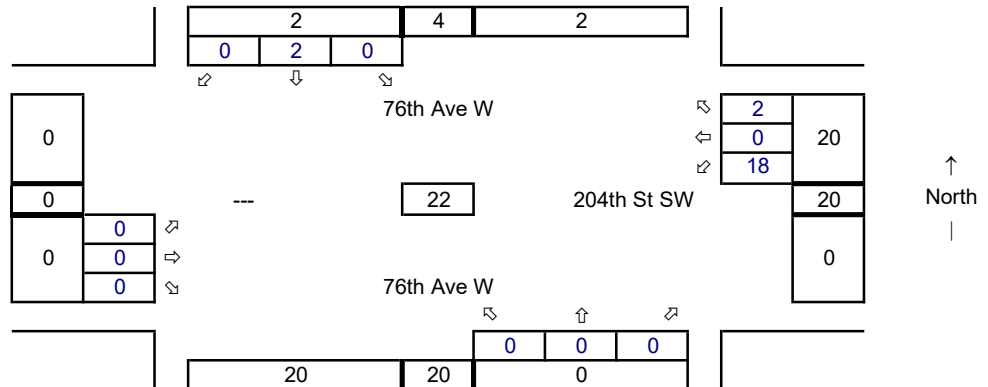
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



7 76th Ave W @ 202nd St SW

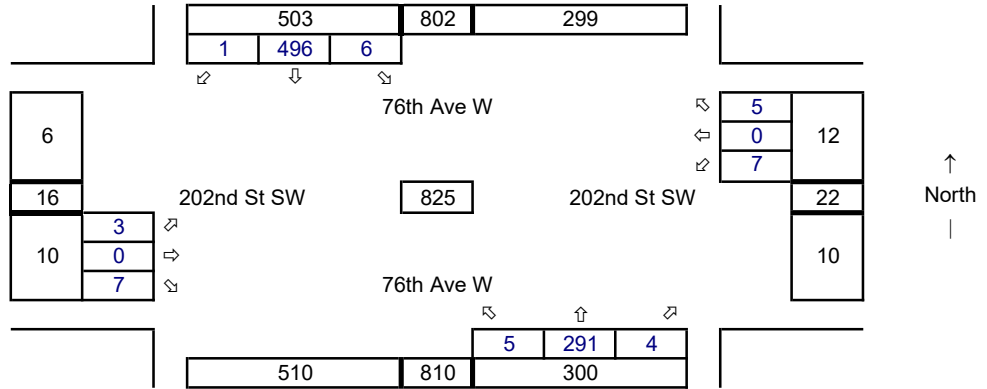
Synchro ID: 7

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

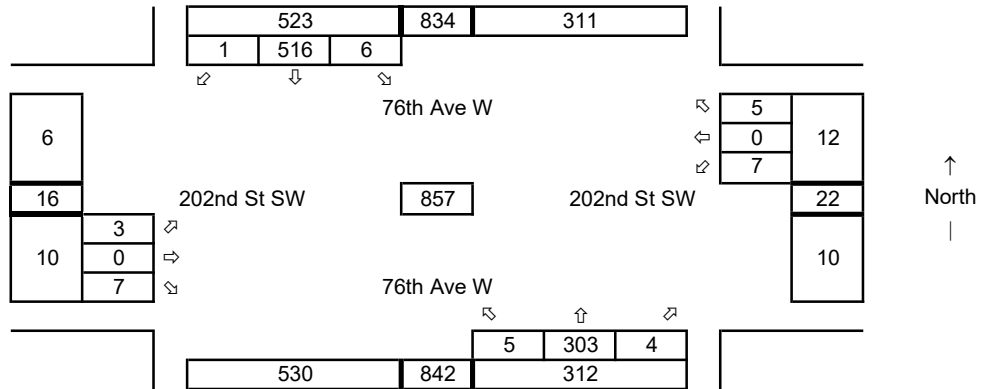
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

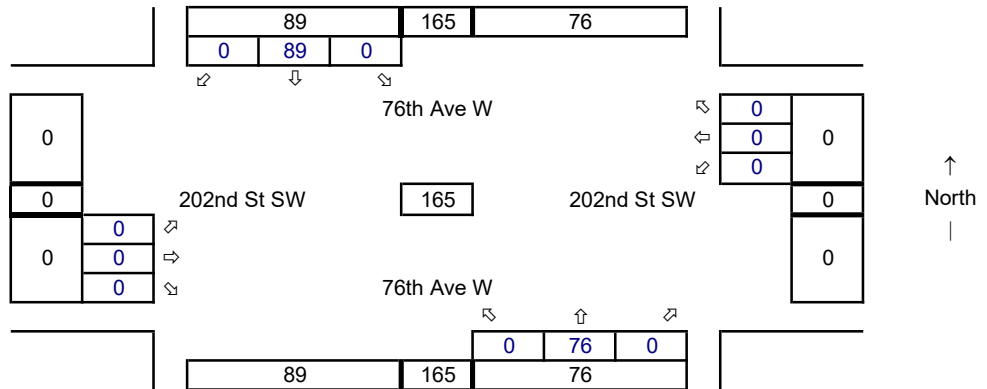
Years of Growth = 4

Total Growth = 1.0406



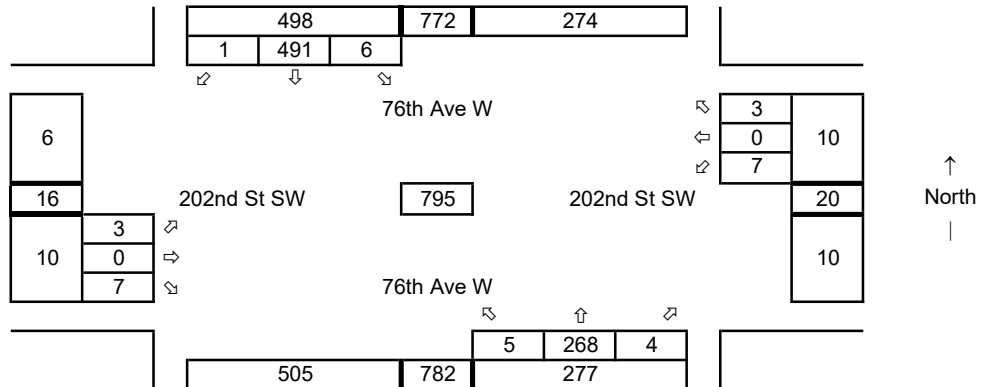
Total Project Trips

Average Weekday
AM Peak Hour

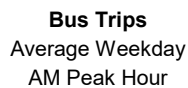
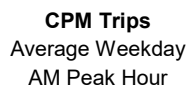
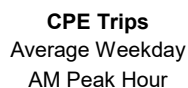


Future with Project

Average Weekday
AM Peak Hour



Re-Routed Project Trips
Average Weekday
AM Peak Hour



8 76th Ave W @ 196th St SW

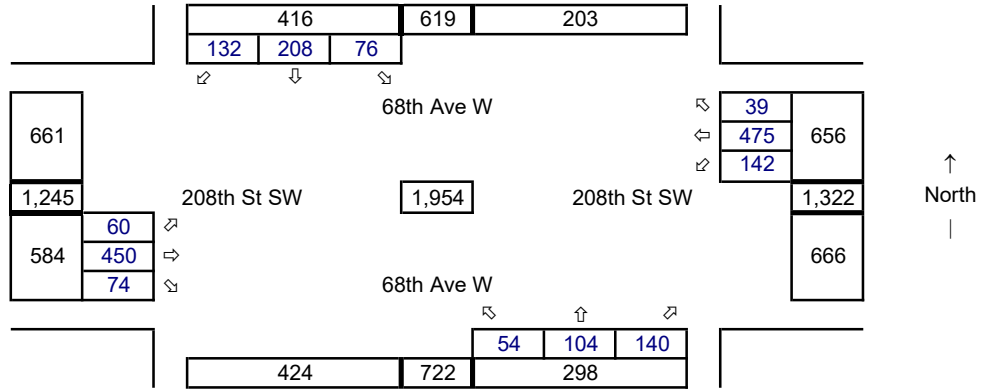
Synchro ID: 8

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

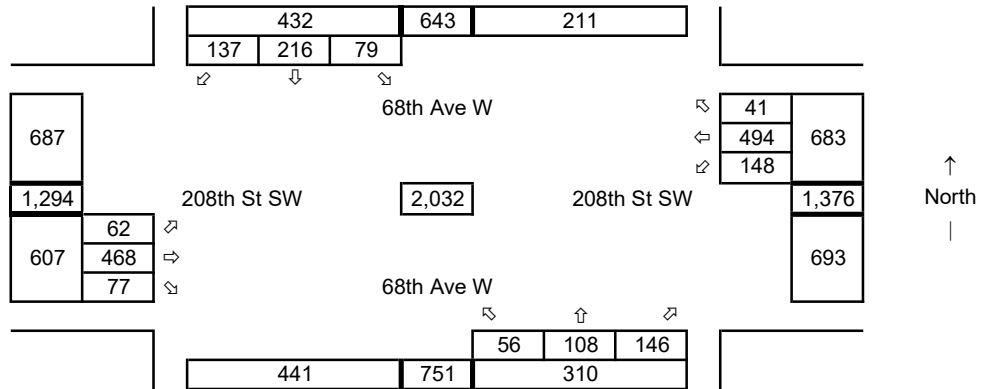
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

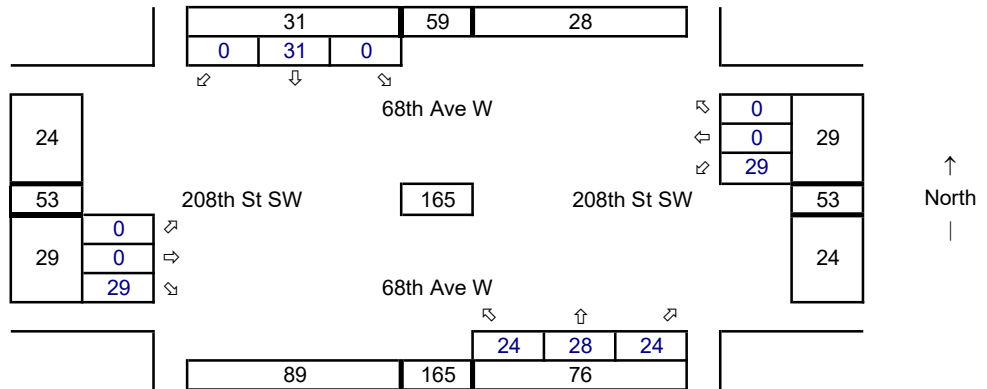
Years of Growth = 4

Total Growth = 1.0406



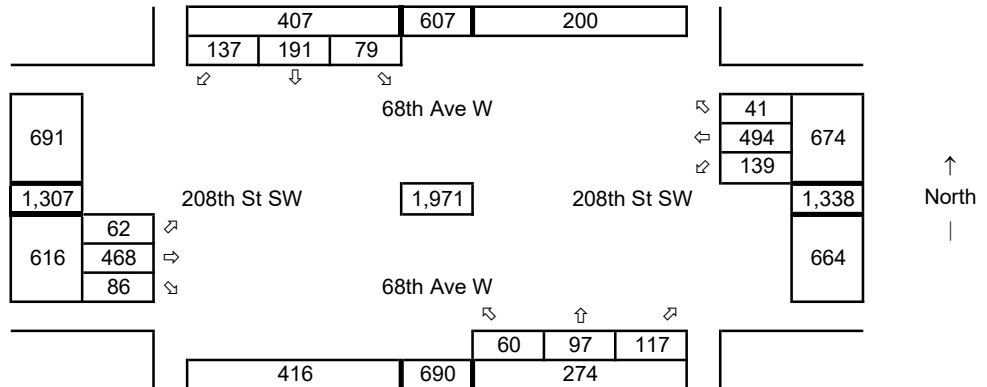
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

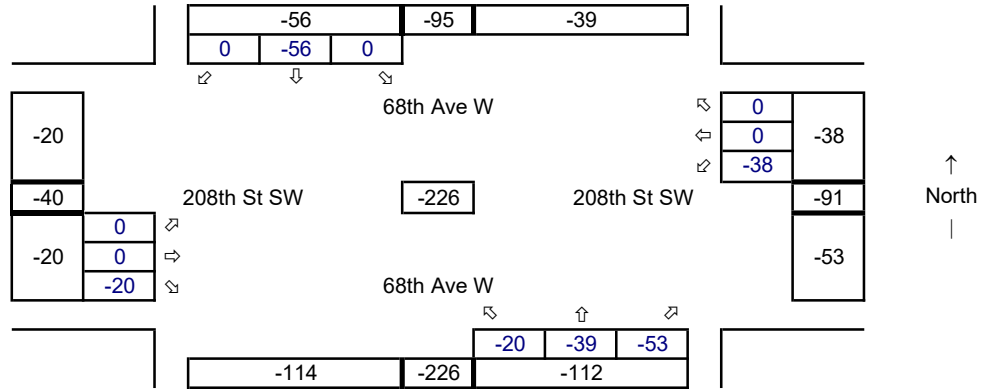
Average Weekday
AM Peak Hour



8 76th Ave W @ 196th St SW

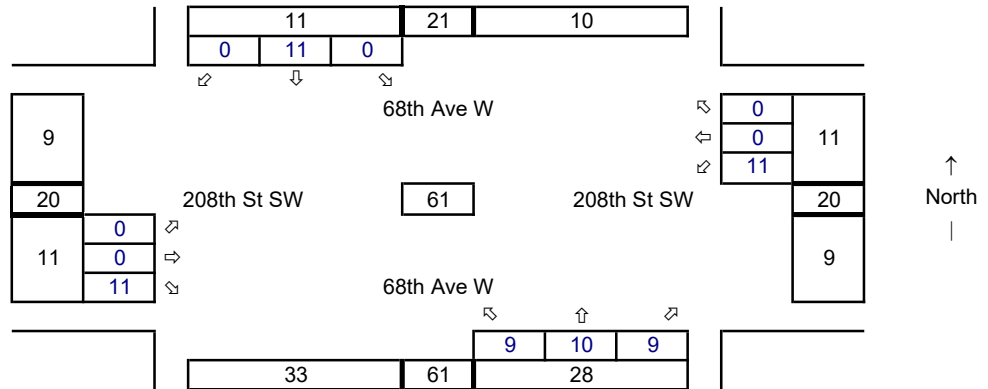
Re-Routed Project Trips

Average Weekday
AM Peak Hour



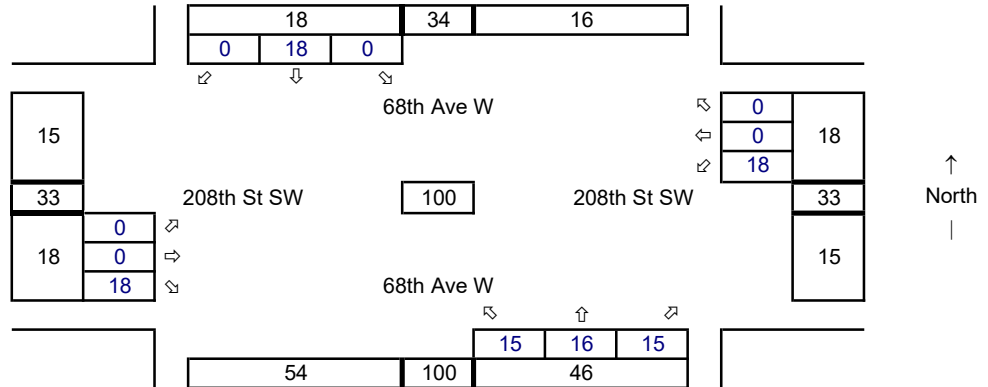
CPE Trips

Average Weekday
AM Peak Hour



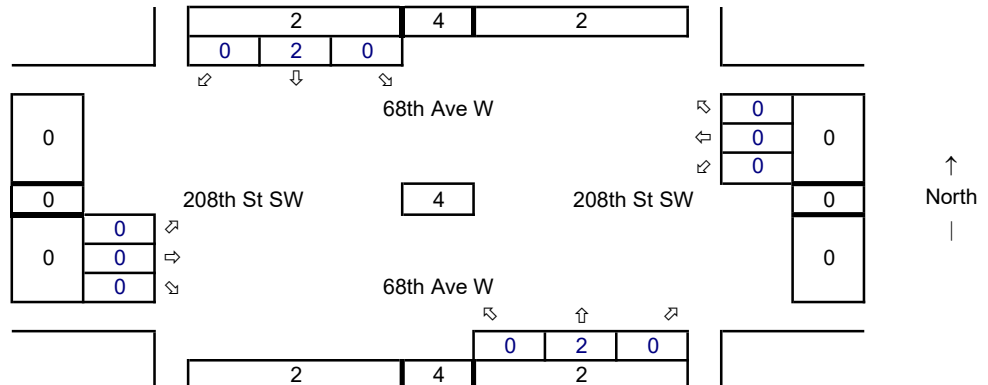
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



9 E MS Exit @ 208th St SW

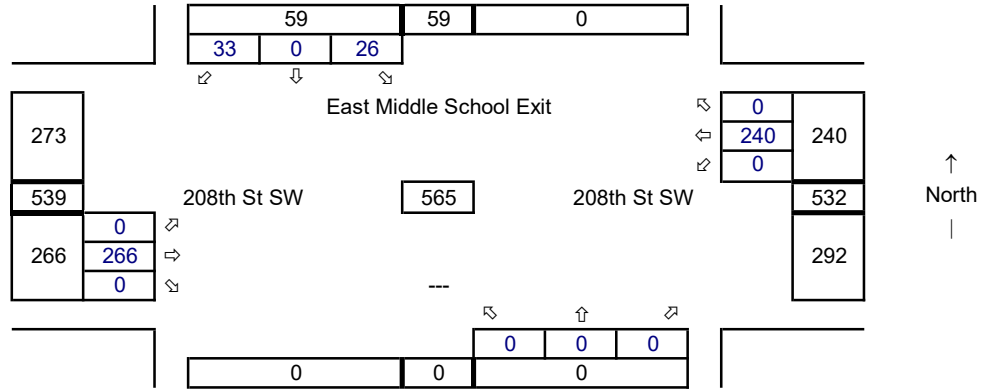
Synchro ID: 9

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

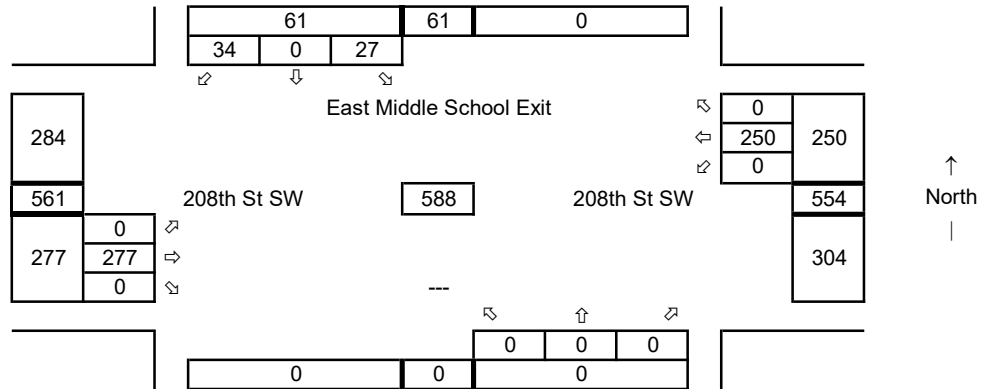
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

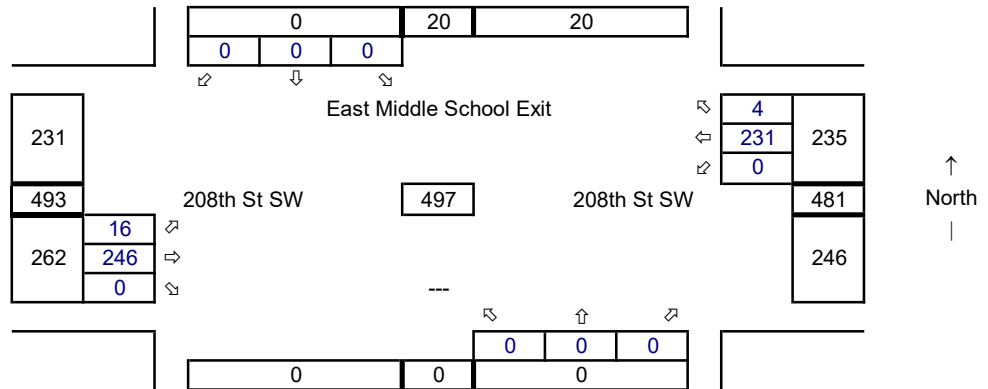
Years of Growth = 4

Total Growth = 1.0406



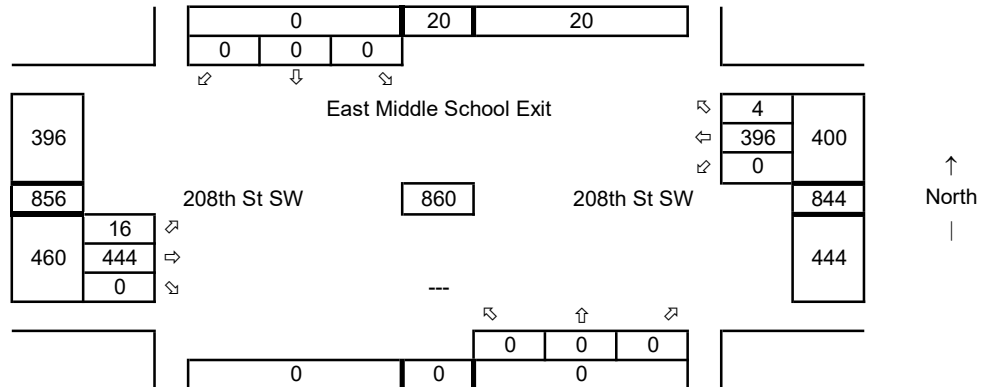
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

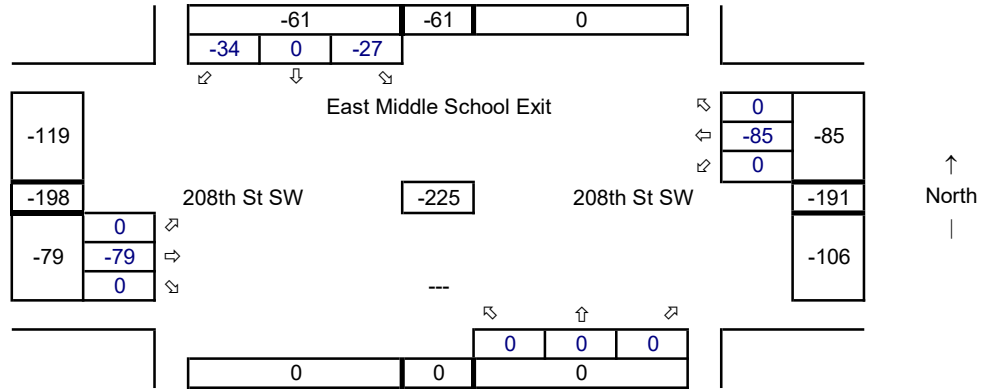
Average Weekday
AM Peak Hour



9 E MS Exit @ 208th St SW

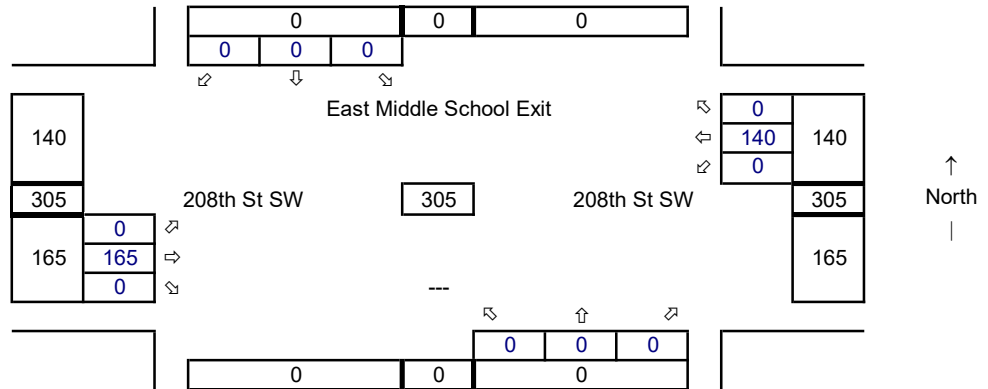
Re-Routed Project Trips

Average Weekday
AM Peak Hour



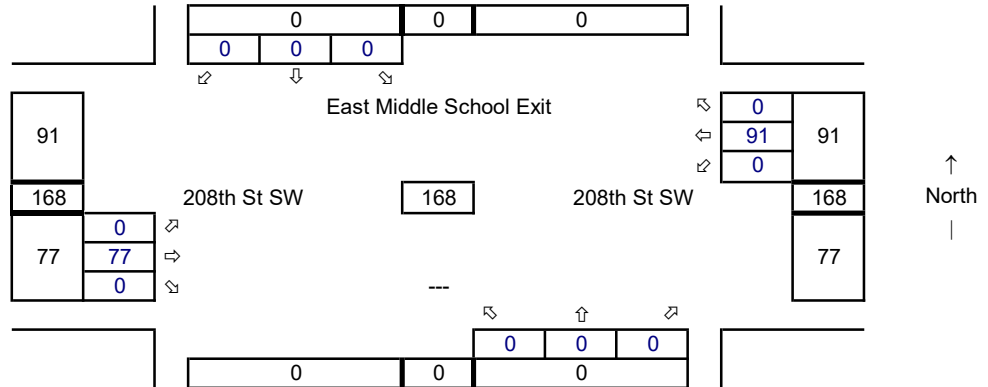
CPE Trips

Average Weekday
AM Peak Hour



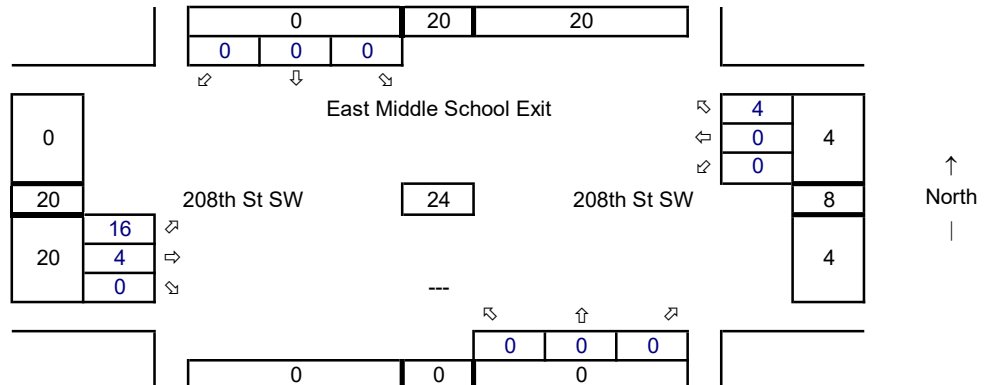
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

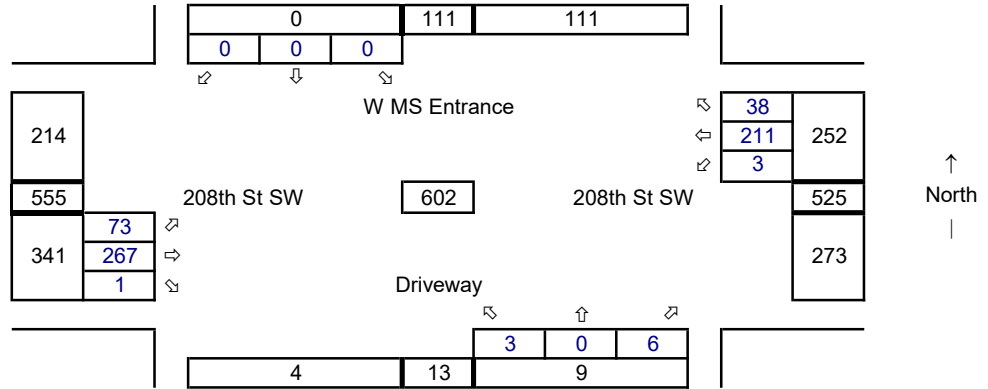
Average Weekday
AM Peak Hour



Synchro ID: 10

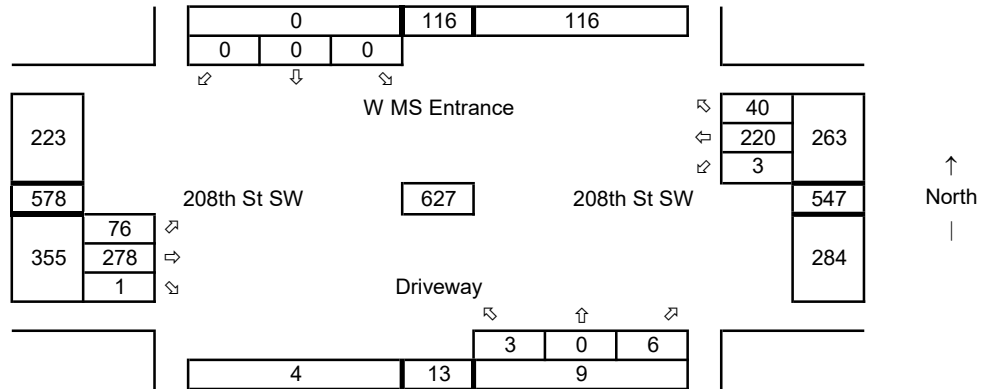
Average Weekday
AM Peak Hour

Data Source: TDG

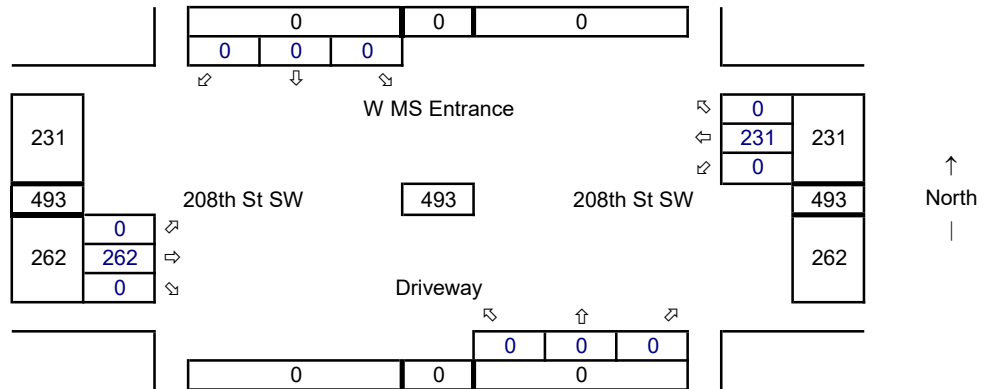


Average Weekday
AM Peak Hour

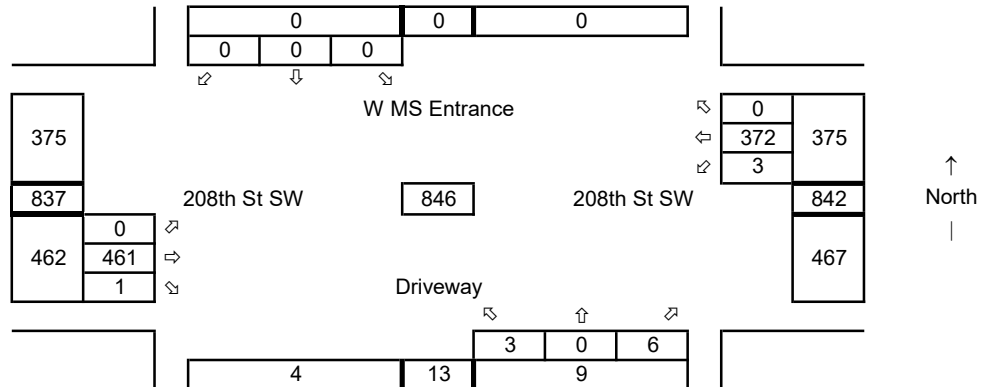
Years of Growth = 4
Total Growth = 1.0406



Average Weekday
AM Peak Hour



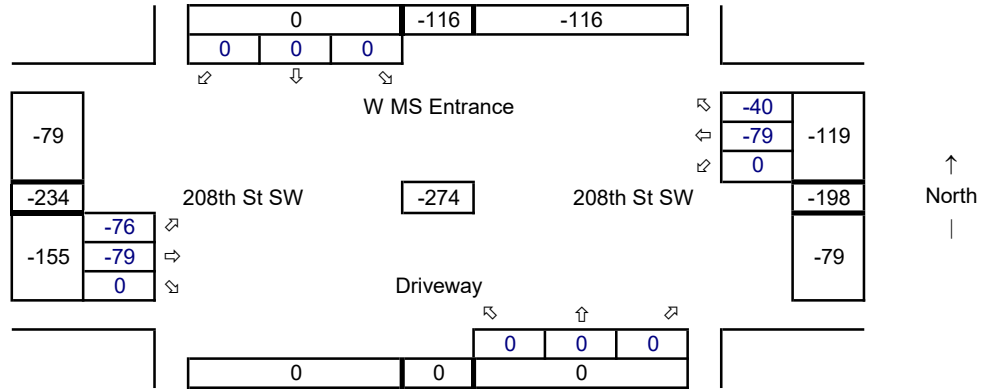
Average Weekday
AM Peak Hour



10 W MS Entrance @ 208th St SW

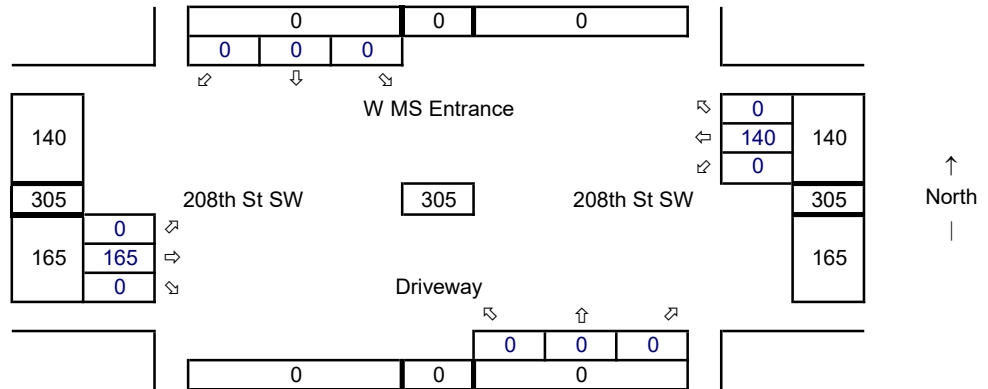
Re-Routed Project Trips

Average Weekday
AM Peak Hour



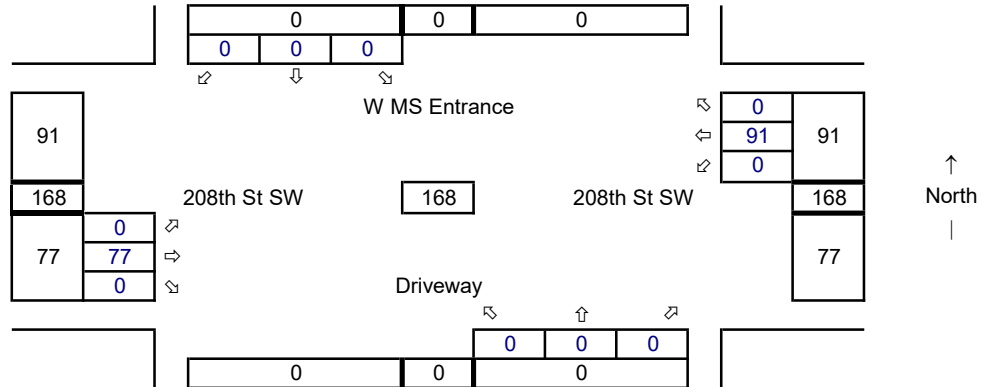
CPE Trips

Average Weekday
AM Peak Hour



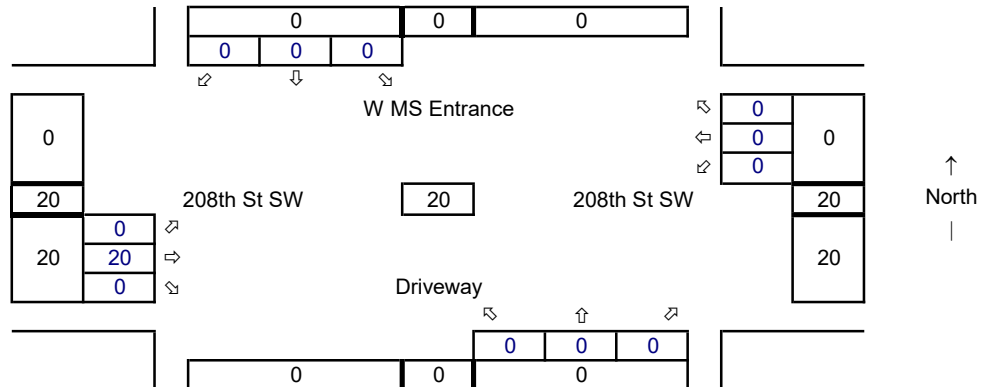
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



11 W MS Exit @ 208th St SW

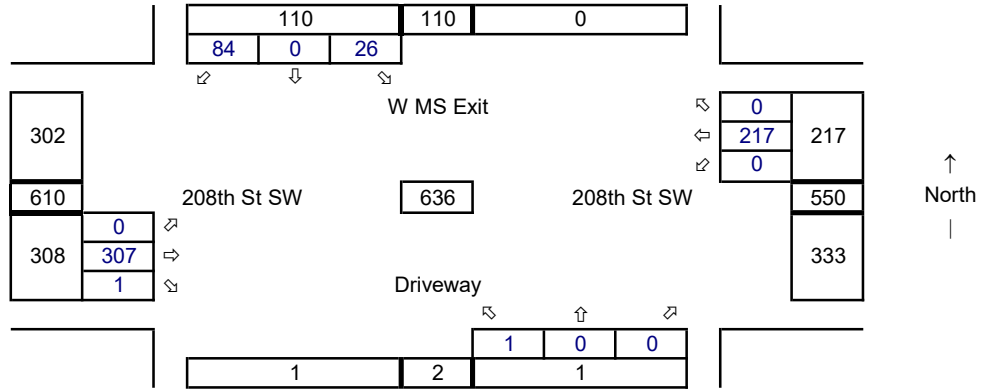
Synchro ID: 11

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

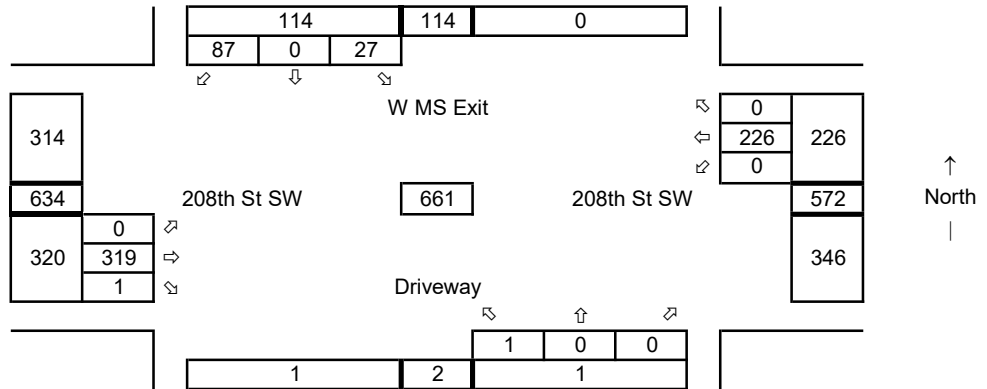
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

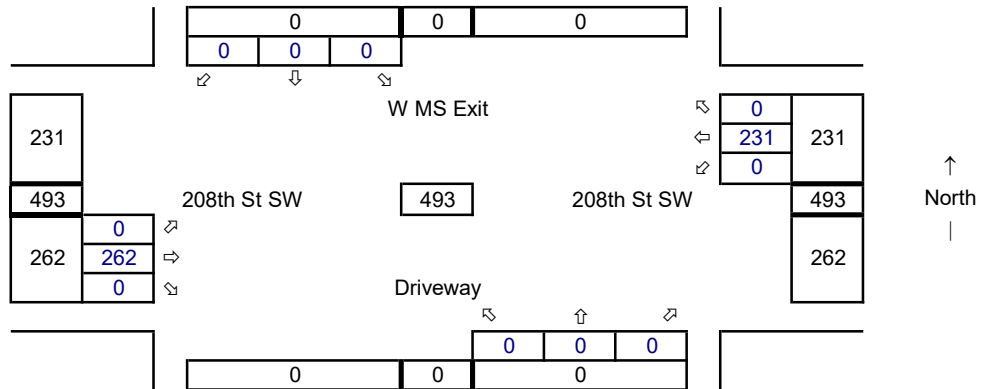
Years of Growth = 4

Total Growth = 1.0406



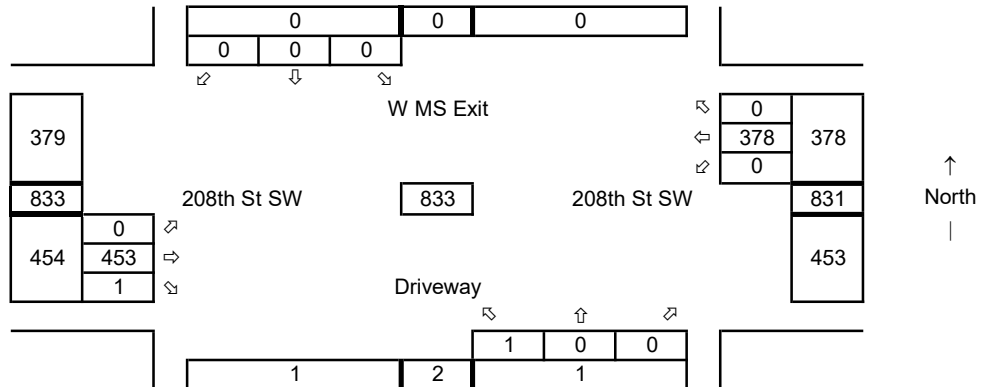
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

Average Weekday
AM Peak Hour



12 76th Ave W @ ES Entrance

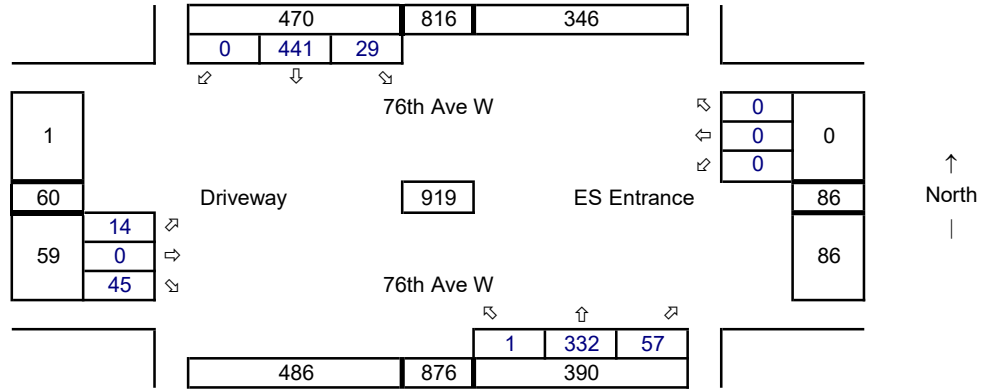
Synchro ID: 12

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

Years of Growth = 4

Total Growth = 1.0406



Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

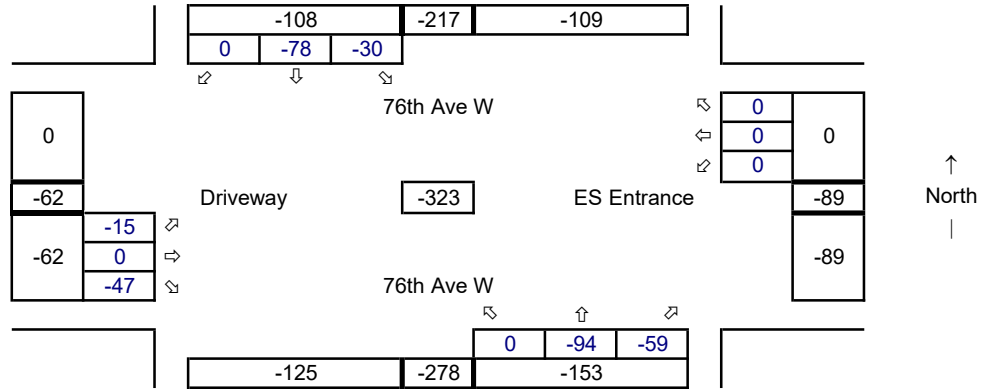
Average Weekday
AM Peak Hour



12 76th Ave W @ ES Entrance

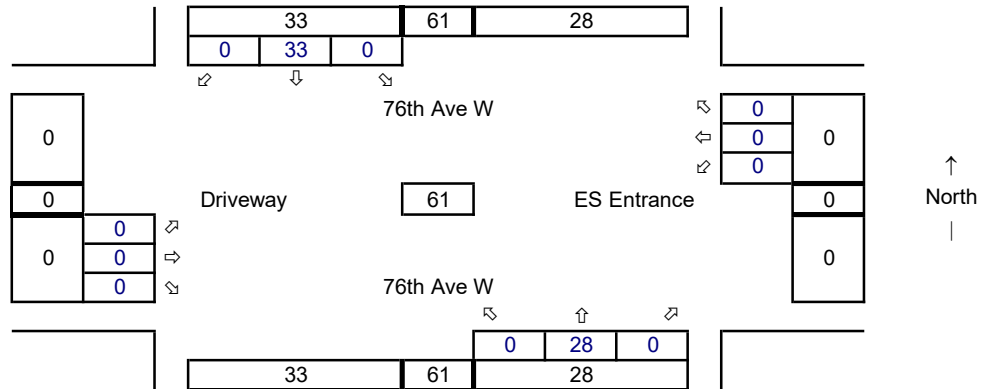
Re-Routed Project Trips

Average Weekday
AM Peak Hour



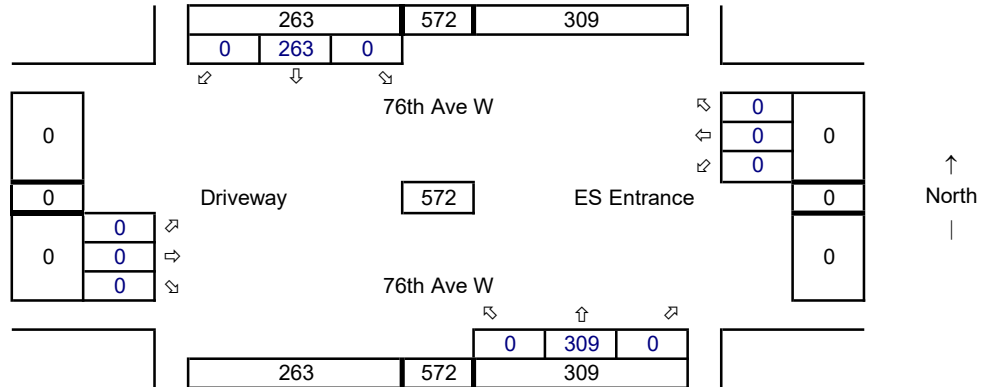
CPE Trips

Average Weekday
AM Peak Hour



CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



13 ES Exit @ 204th St SW

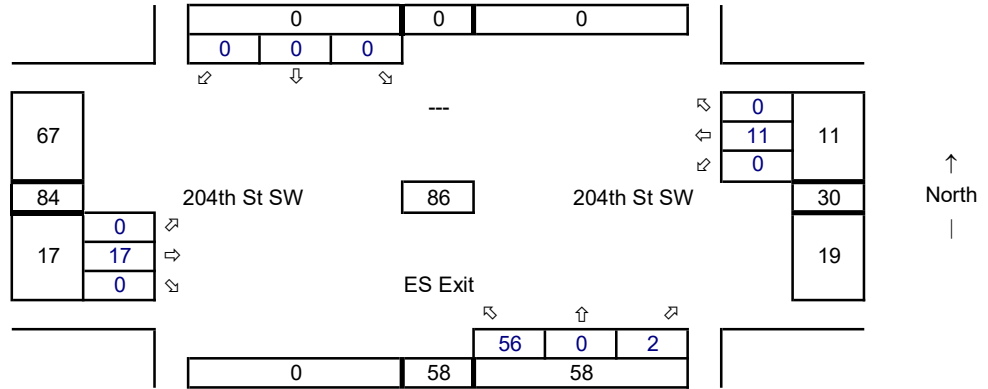
Synchro ID: 13

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

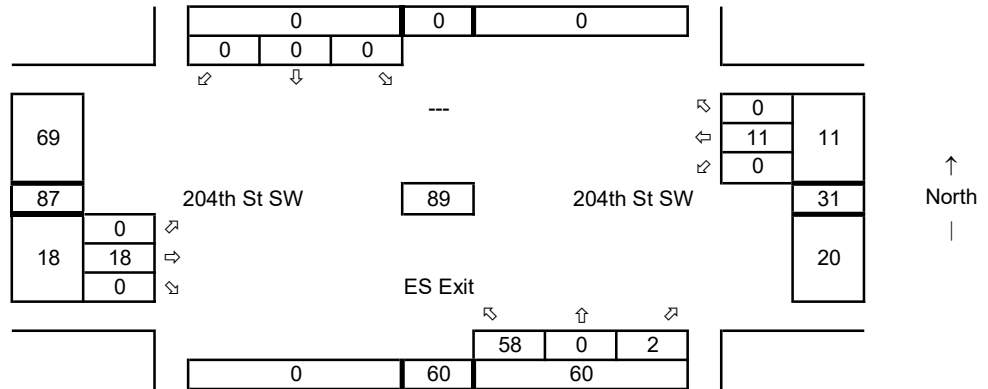
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

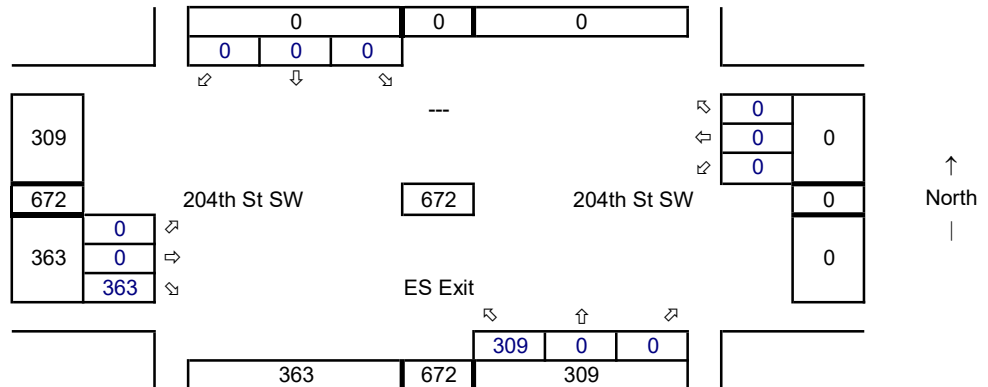
Years of Growth = 4

Total Growth = 1.0406



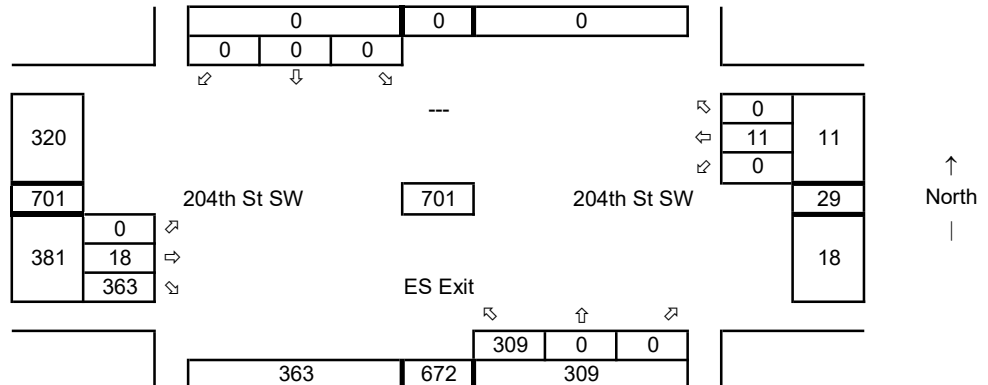
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

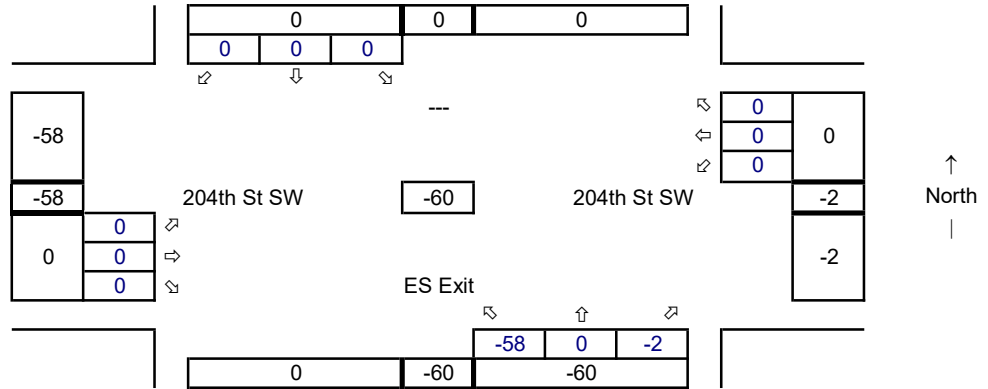
Average Weekday
AM Peak Hour



13 ES Exit @ 204th St SW

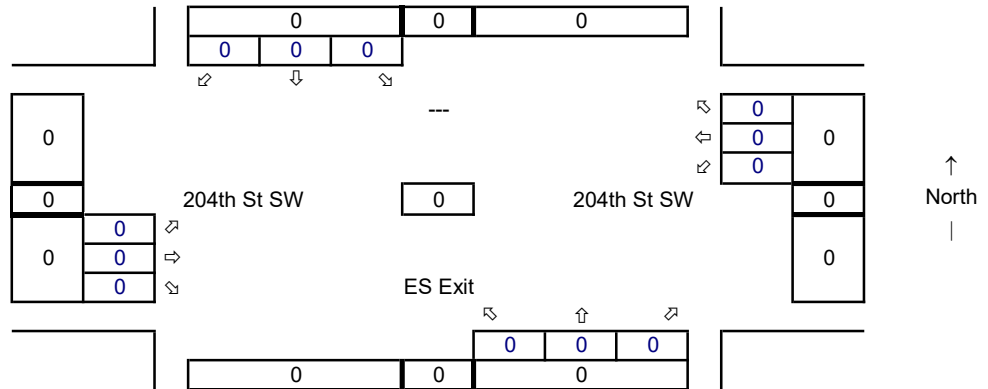
Re-Routed Project Trips

Average Weekday
AM Peak Hour



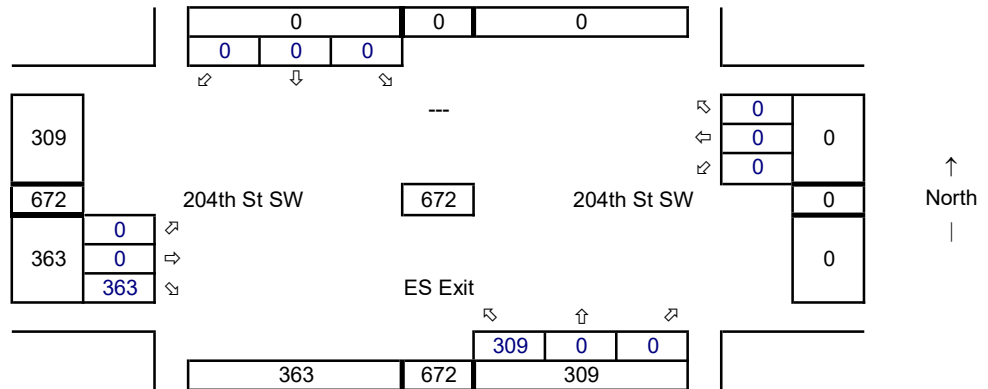
CPE Trips

Average Weekday
AM Peak Hour



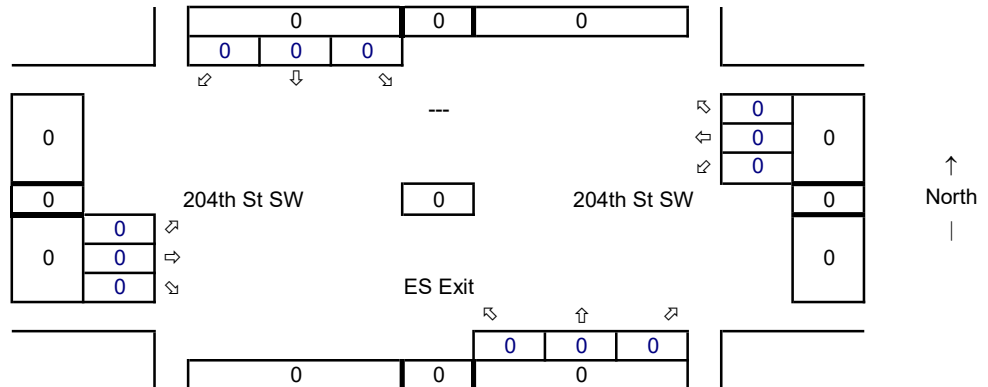
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



14 Bus Spine @ 204th St SW

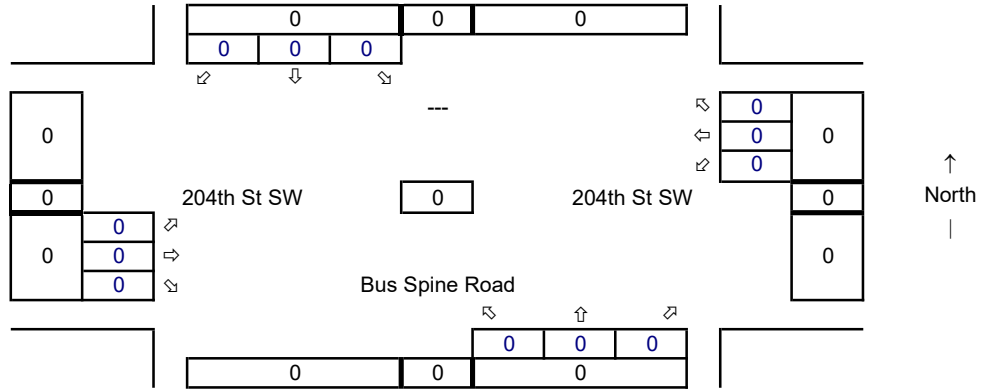
Synchro ID: 14

Existing

Average Weekday
AM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

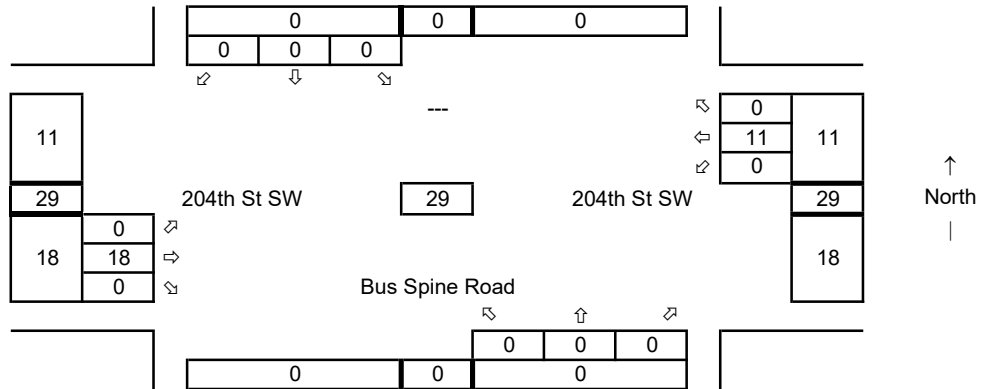
Average Weekday
AM Peak Hour

Year: 2028

Growth Rate = 1%

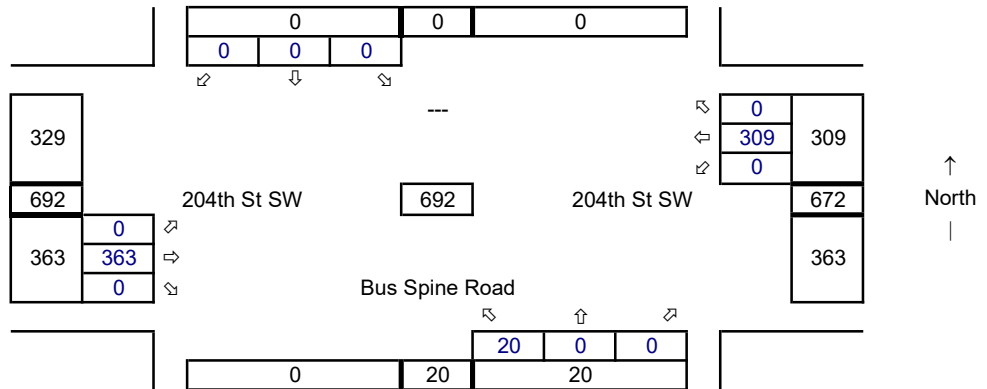
Years of Growth = 4

Total Growth = 1.0406



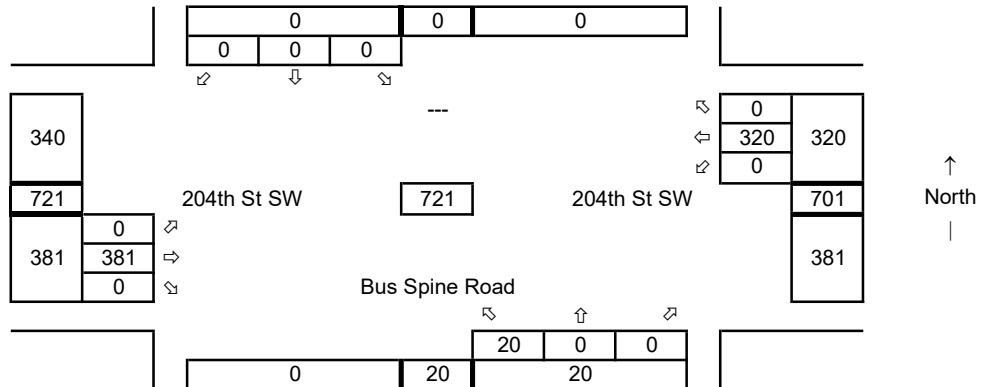
Total Project Trips

Average Weekday
AM Peak Hour



Future with Project

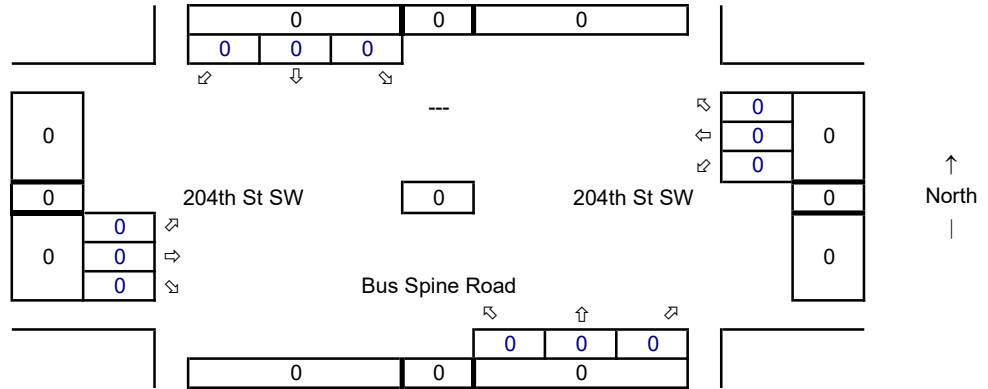
Average Weekday
AM Peak Hour



14 Bus Spine @ 204th St SW

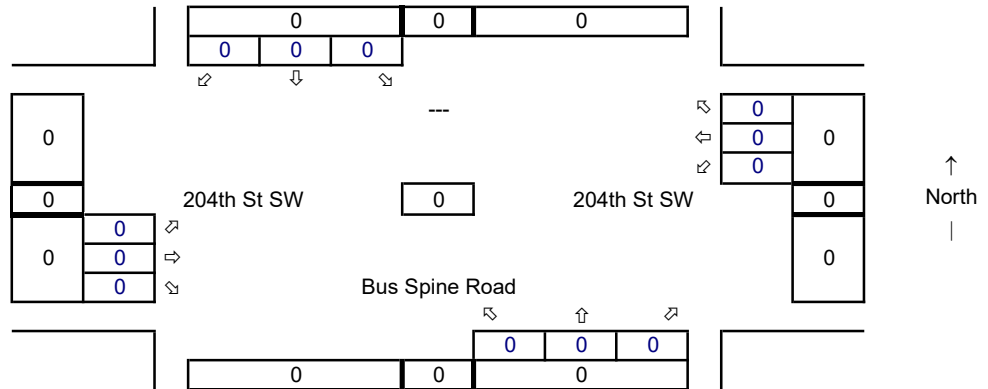
Re-Routed Project Trips

Average Weekday
AM Peak Hour



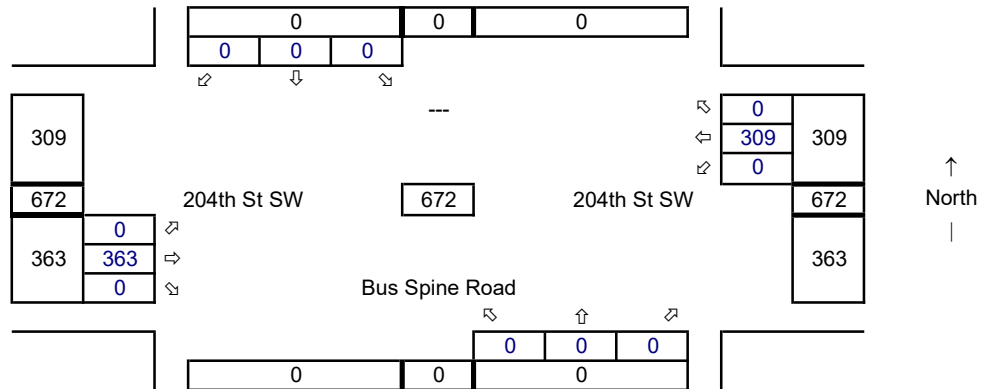
CPE Trips

Average Weekday
AM Peak Hour



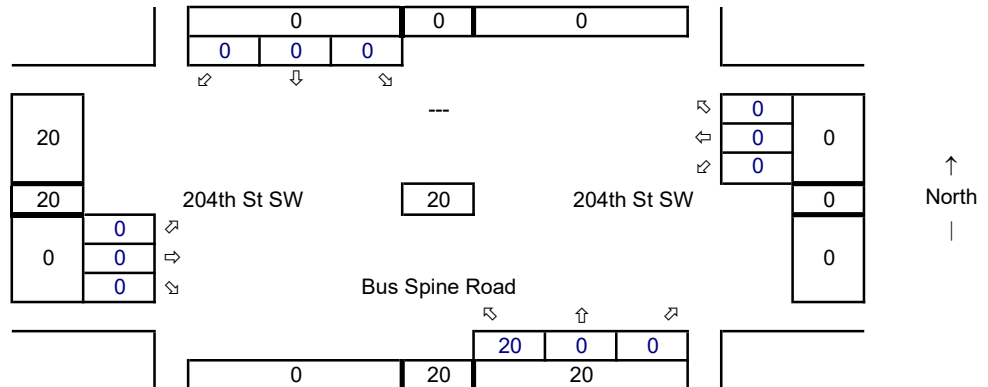
CPM Trips

Average Weekday
AM Peak Hour



Bus Trips

Average Weekday
AM Peak Hour



1 SR-99 @ 208th St SW

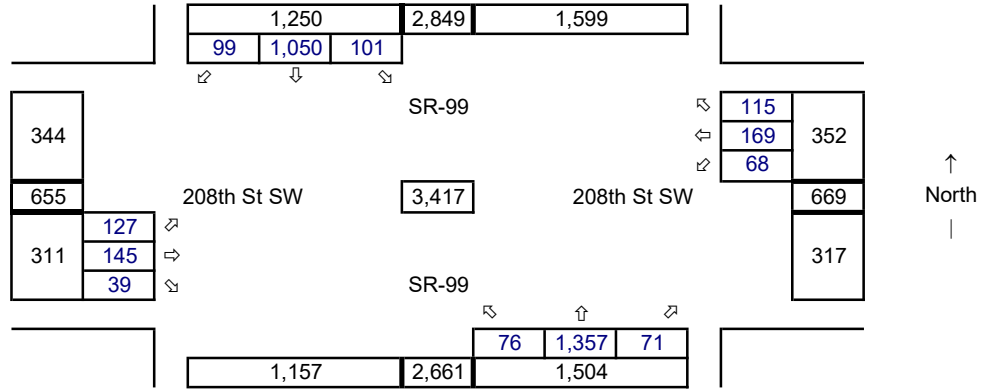
Synchro ID: 1

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

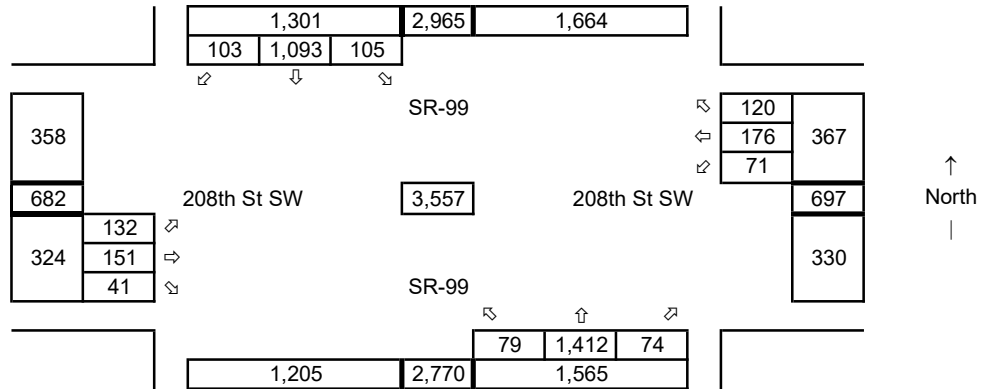
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1.0%

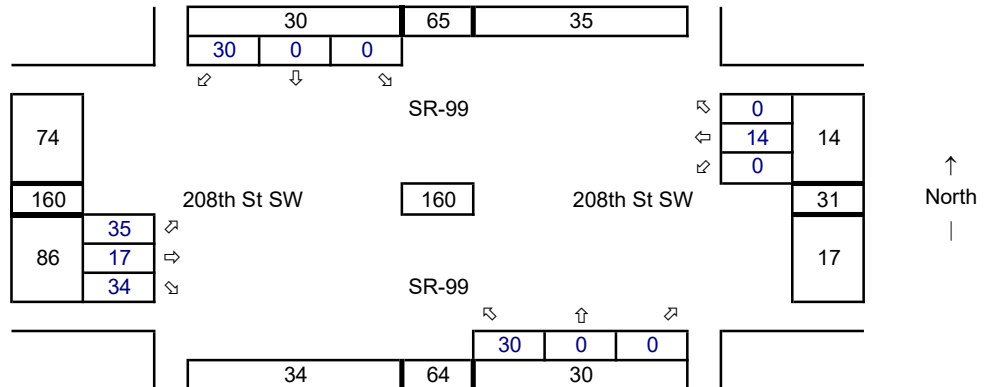
Years of Growth = 4

Total Growth = 1.0406



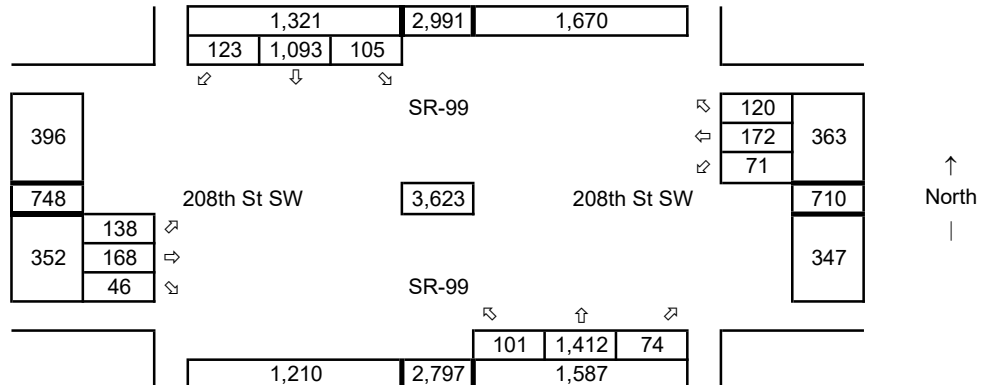
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

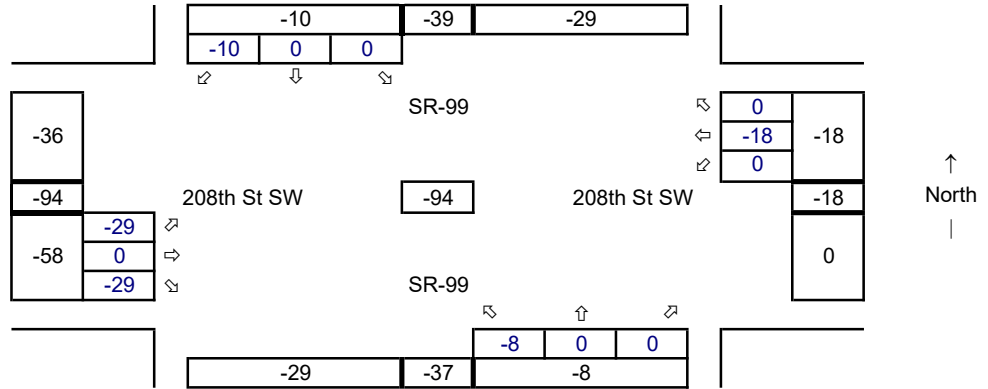
Average Weekday
PM Peak Hour



1 SR-99 @ 208th St SW

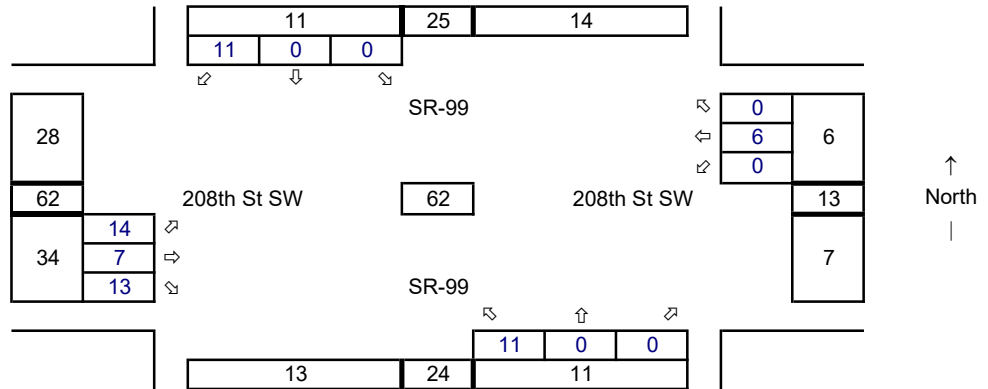
Re-Routed Project Trips

Average Weekday
PM Peak Hour



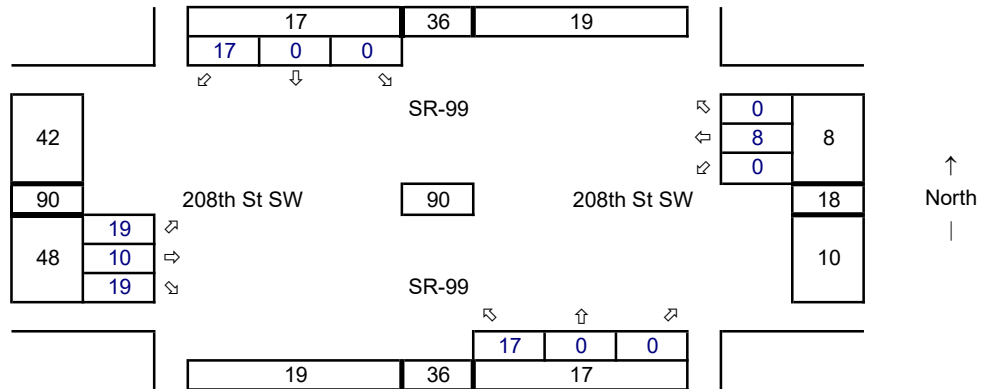
CPE Trips

Average Weekday
PM Peak Hour



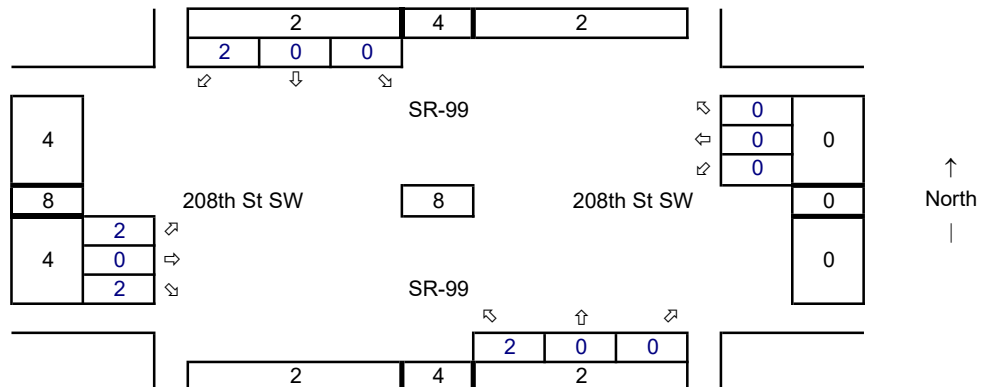
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



2 68th Ave W @ 208th St SW

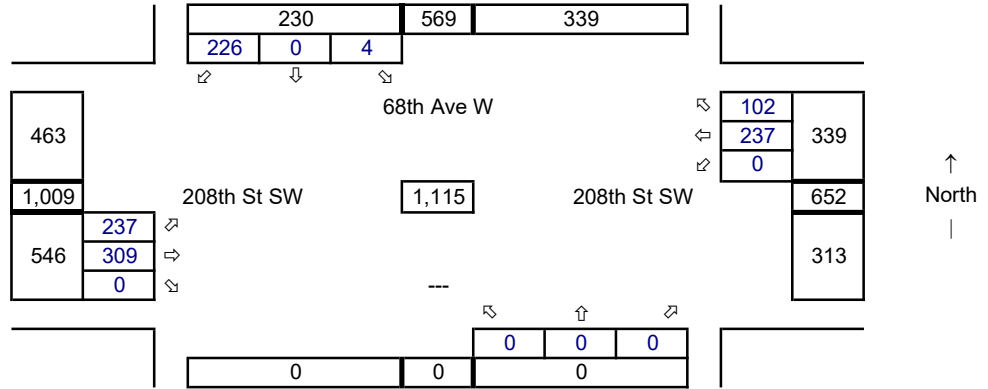
Synchro ID: 2

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

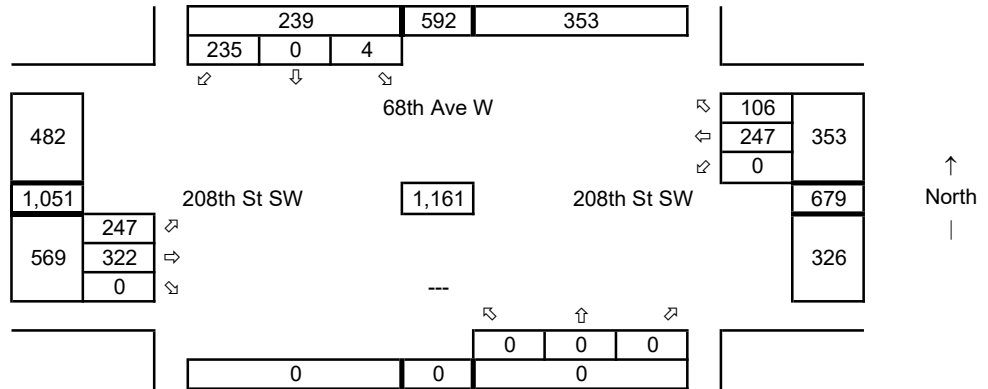
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

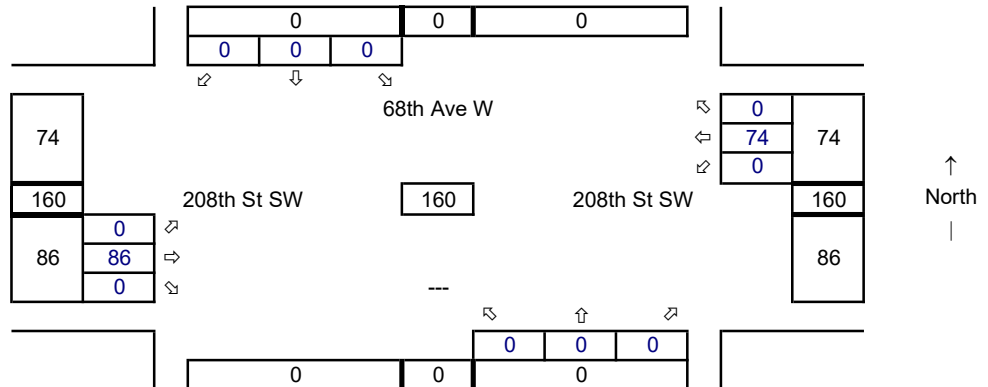
Years of Growth = 4

Total Growth = 1.0406



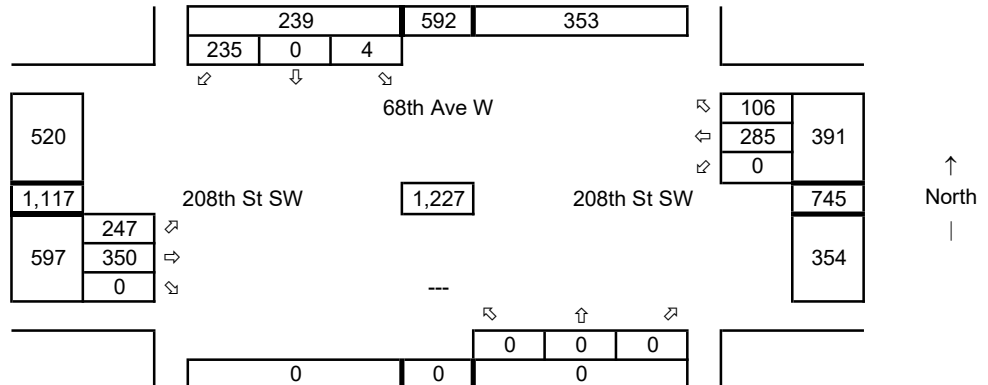
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

Average Weekday
PM Peak Hour



3 74th Ave W @ 208th St SW

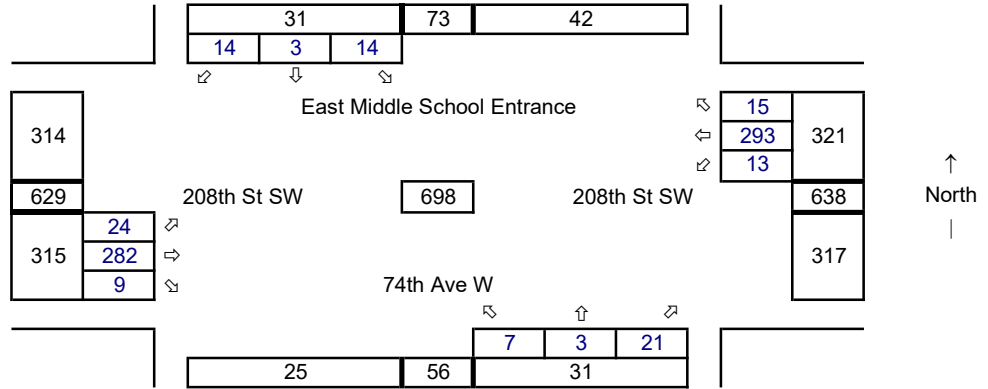
Synchro ID: 3

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

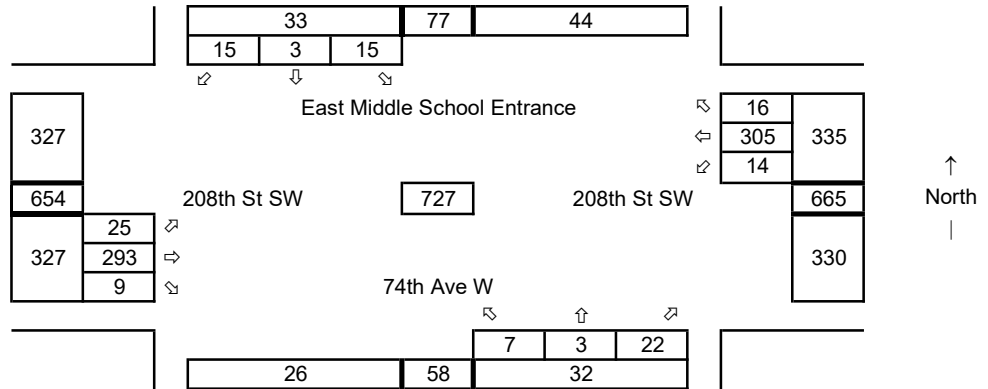
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

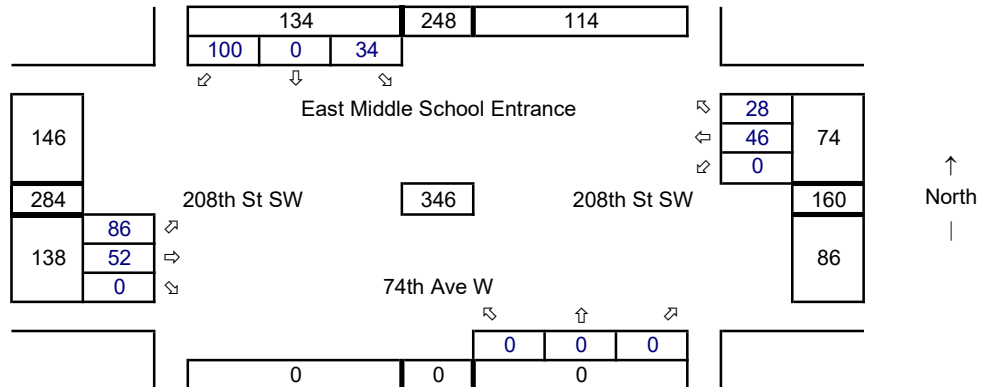
Years of Growth = 4

Total Growth = 1.0406



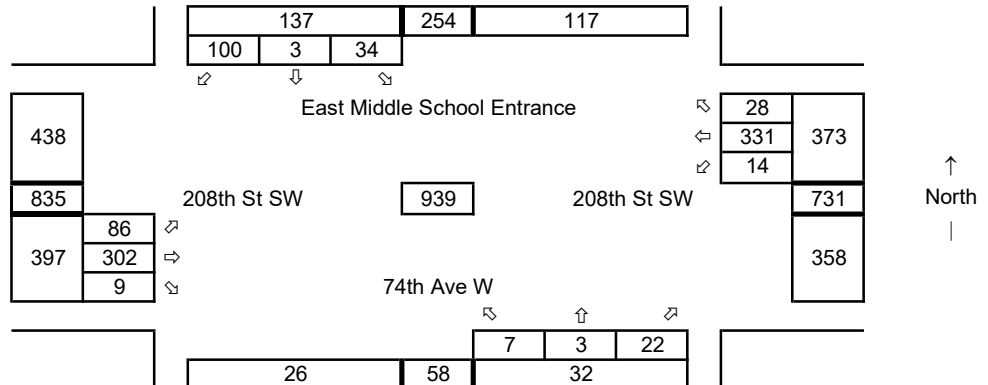
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

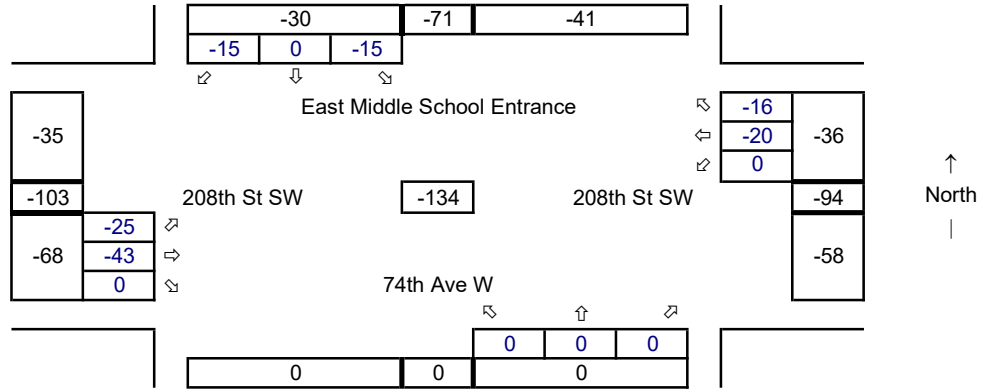
Average Weekday
PM Peak Hour



3 74th Ave W @ 208th St SW

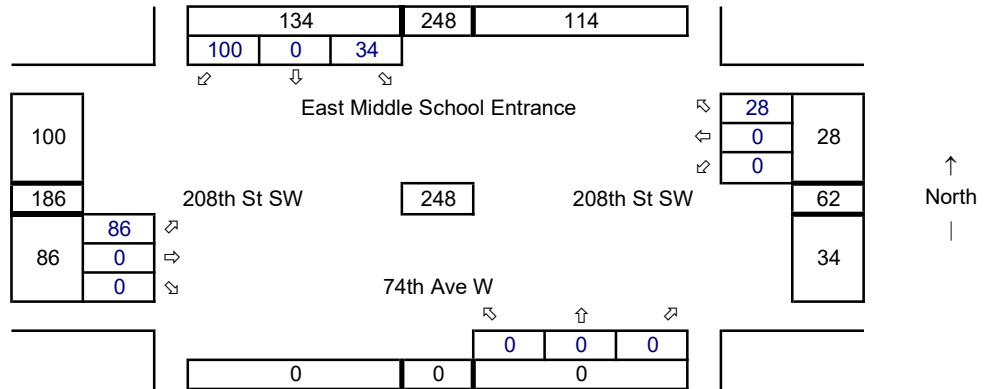
Re-Routed Project Trips

Average Weekday
PM Peak Hour



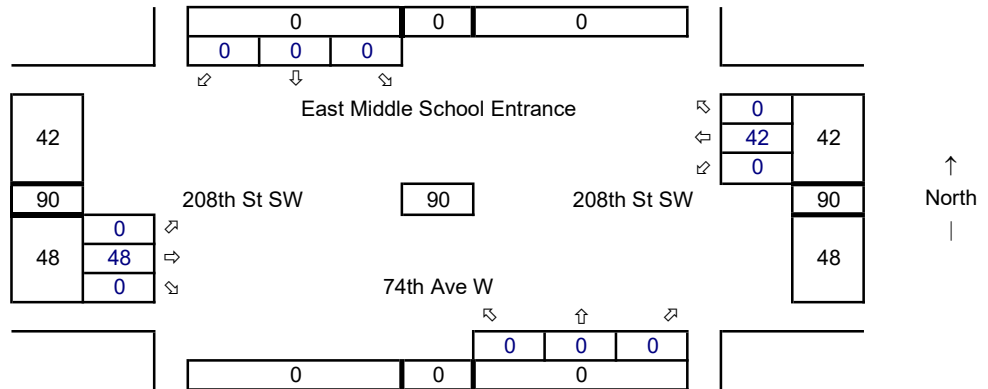
CPE Trips

Average Weekday
PM Peak Hour



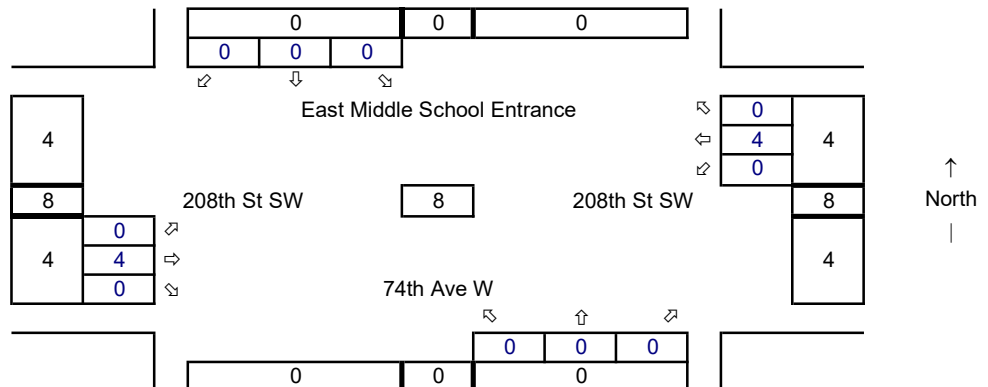
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



4 76th Ave W @ 208th St SW

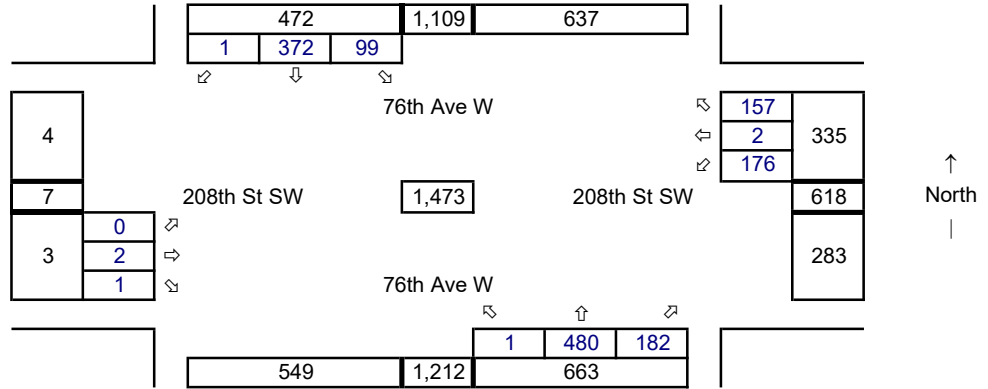
Synchro ID: 4

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

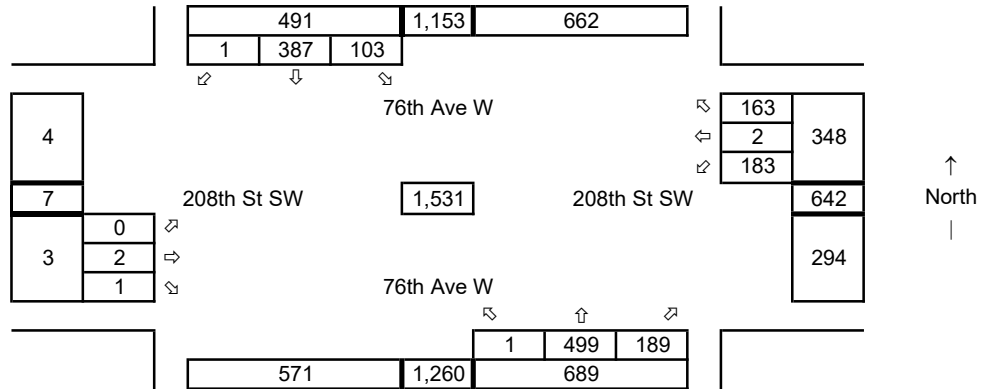
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

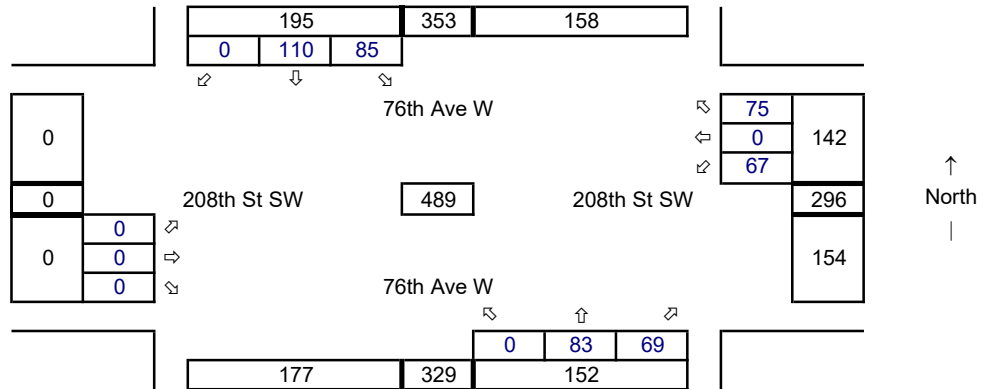
Years of Growth = 4

Total Growth = 1.0406



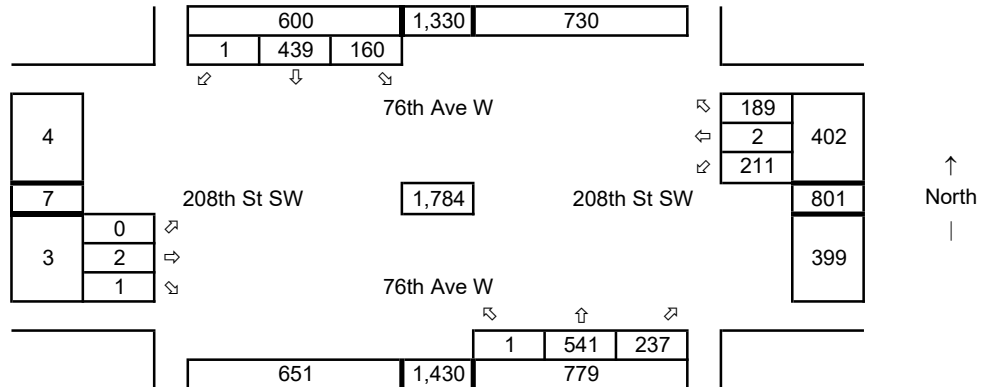
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

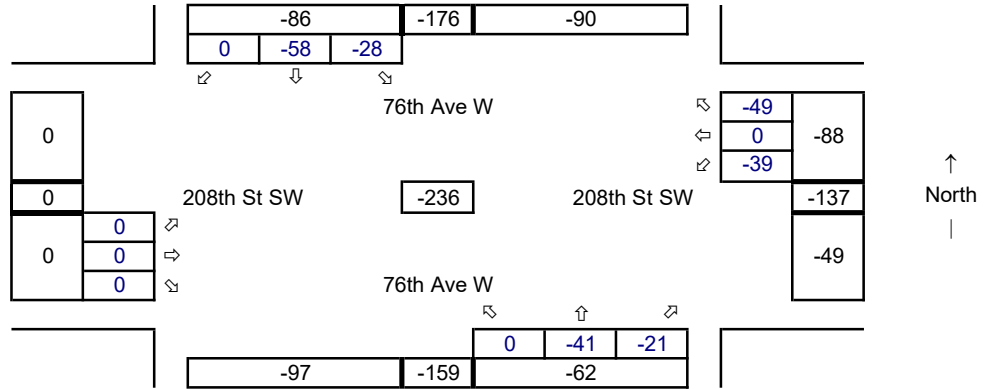
Average Weekday
PM Peak Hour



4 76th Ave W @ 208th St SW

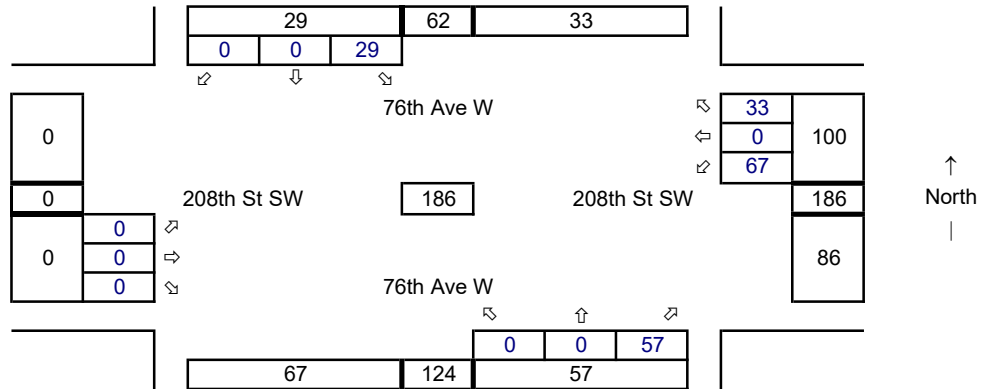
Re-Routed Project Trips

Average Weekday
PM Peak Hour



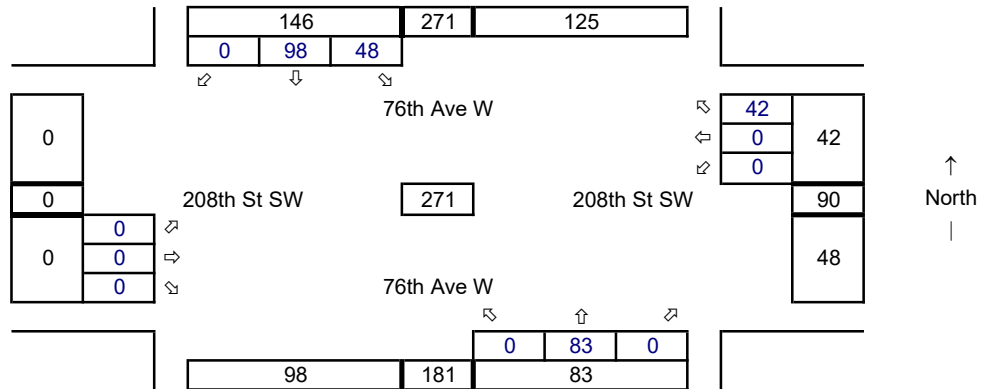
CPE Trips

Average Weekday
PM Peak Hour



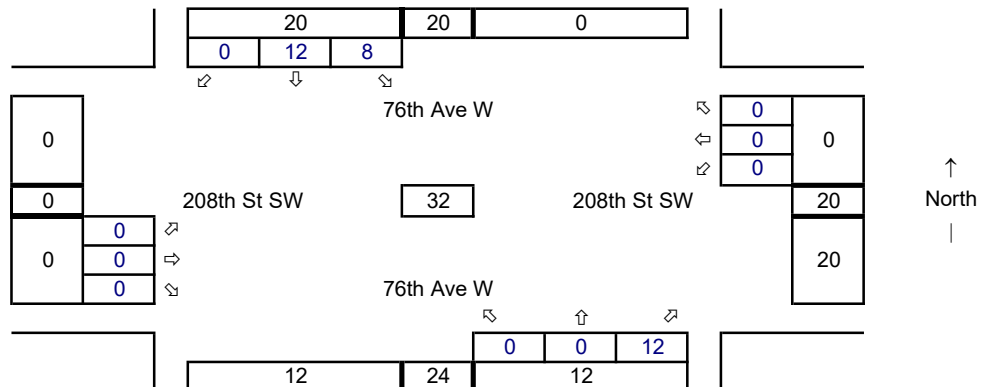
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



5 76th Ave W @ 206th St SW

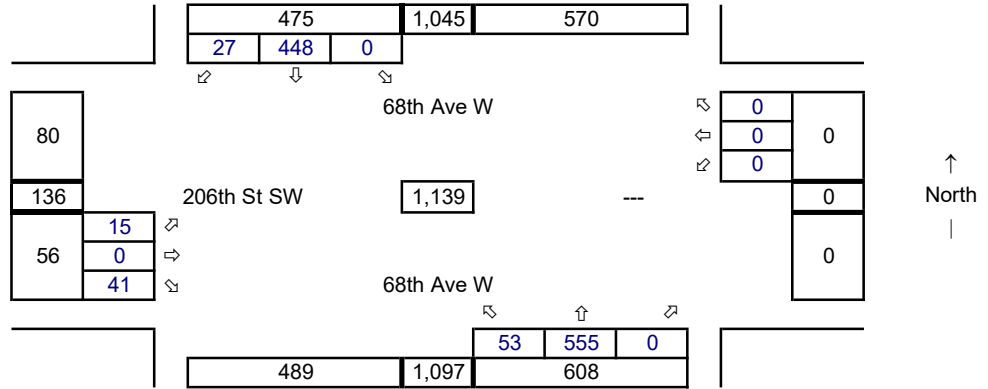
Synchro ID: 5

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

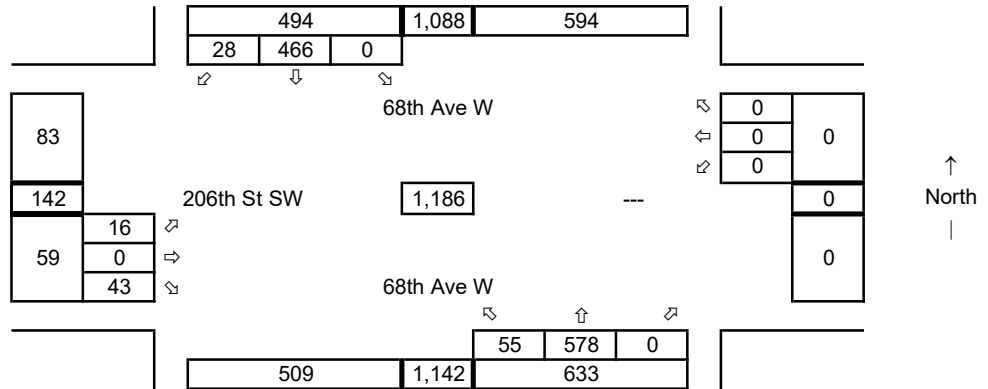
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

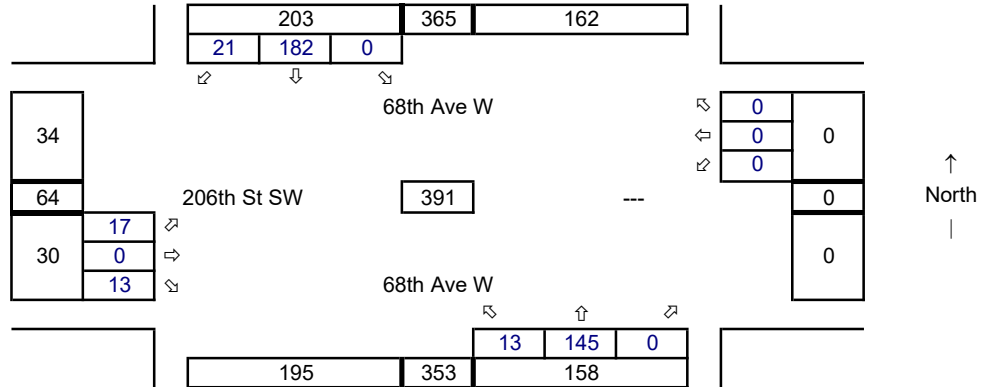
Years of Growth = 4

Total Growth = 1.0406



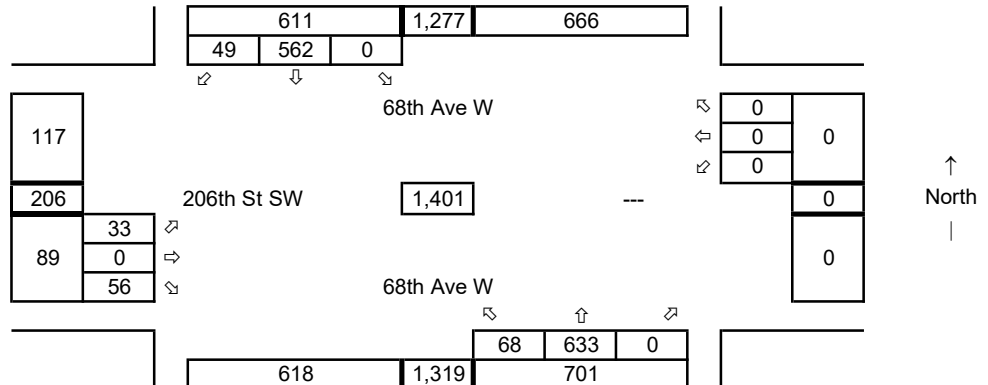
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

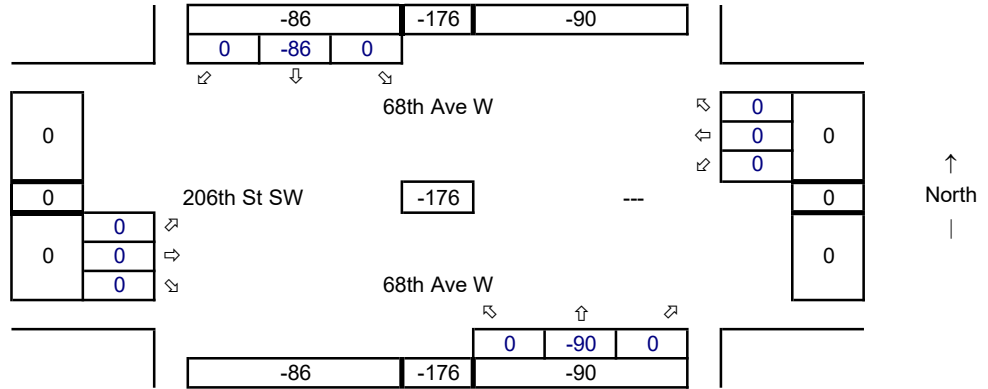
Average Weekday
PM Peak Hour



5 76th Ave W @ 206th St SW

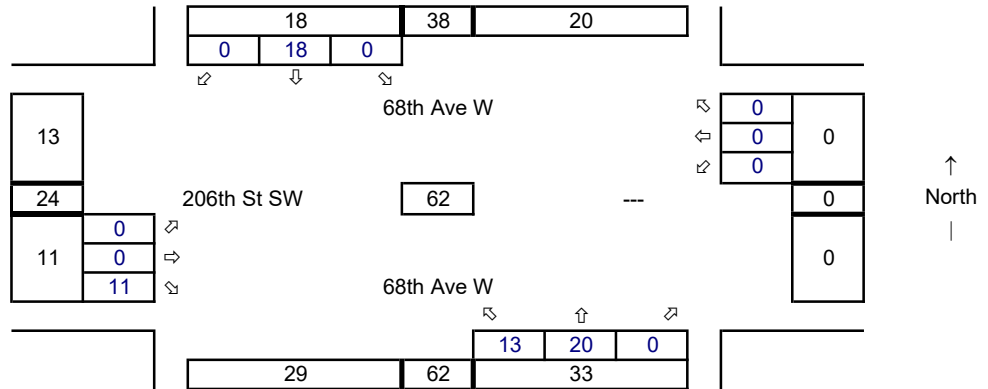
Re-Routed Project Trips

Average Weekday
PM Peak Hour



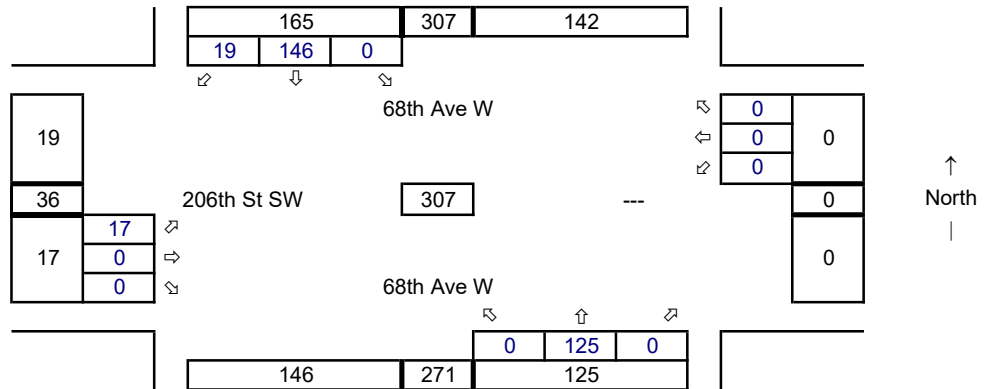
CPE Trips

Average Weekday
PM Peak Hour



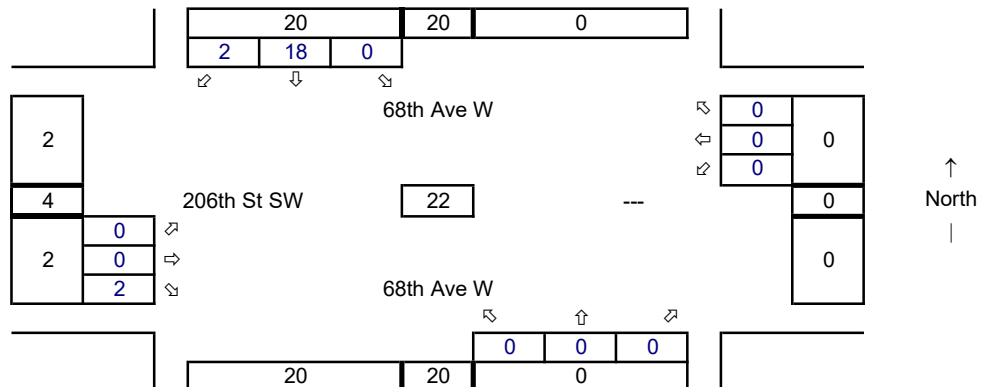
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



6 76th Ave W @ 204th St SW

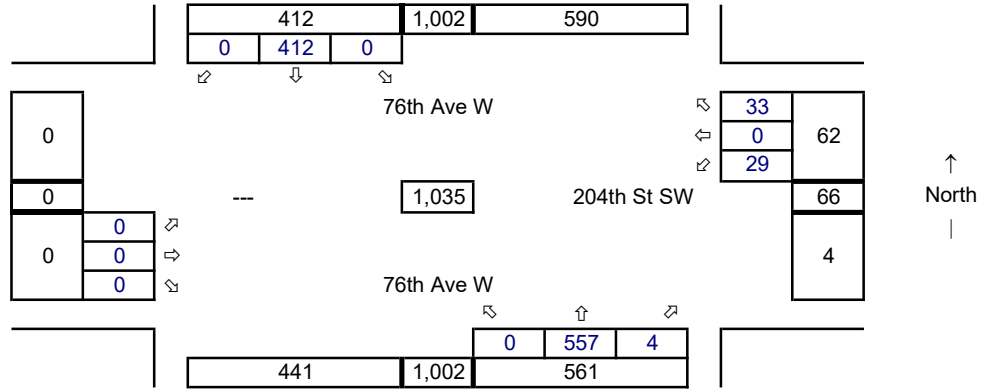
Synchro ID: 6

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

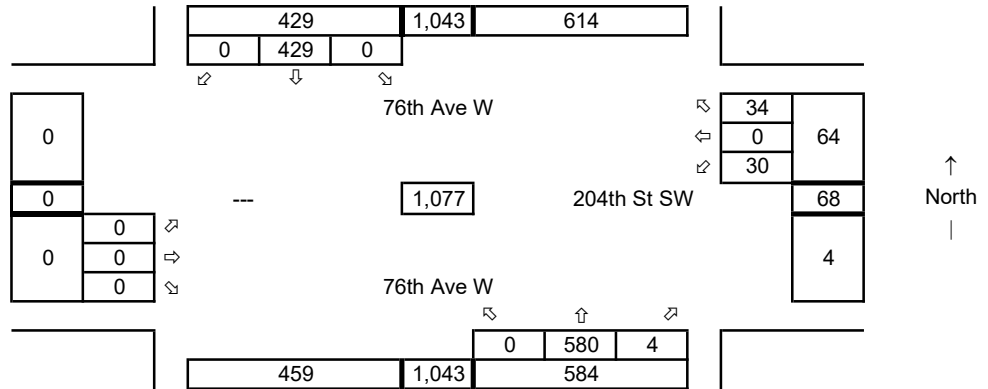
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

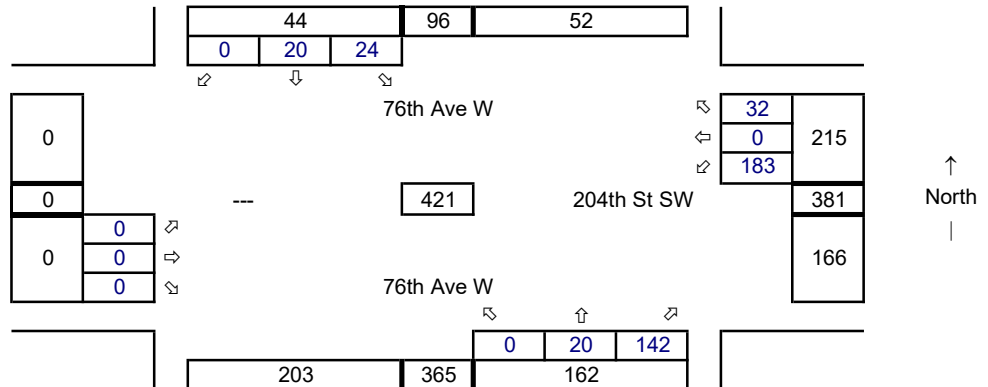
Years of Growth = 4

Total Growth = 1.0406



Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

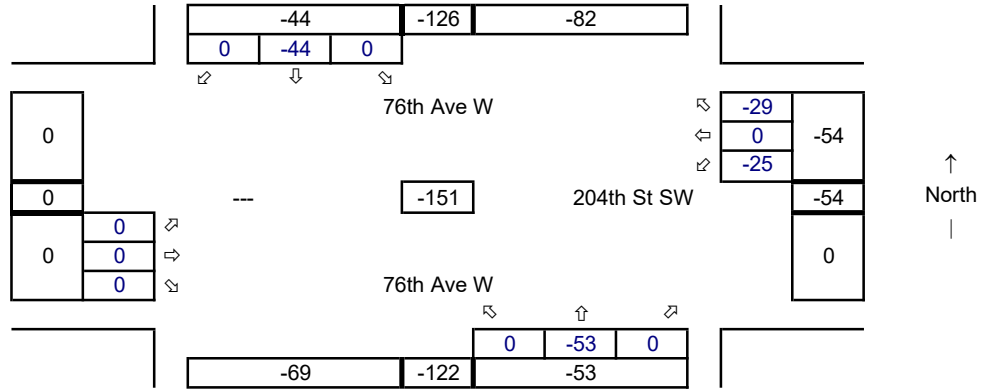
Average Weekday
PM Peak Hour



6 76th Ave W @ 204th St SW

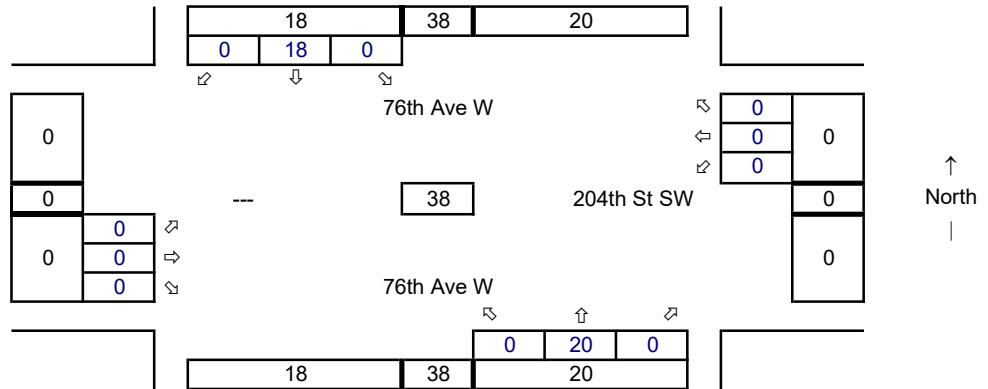
Re-Routed Project Trips

Average Weekday
PM Peak Hour



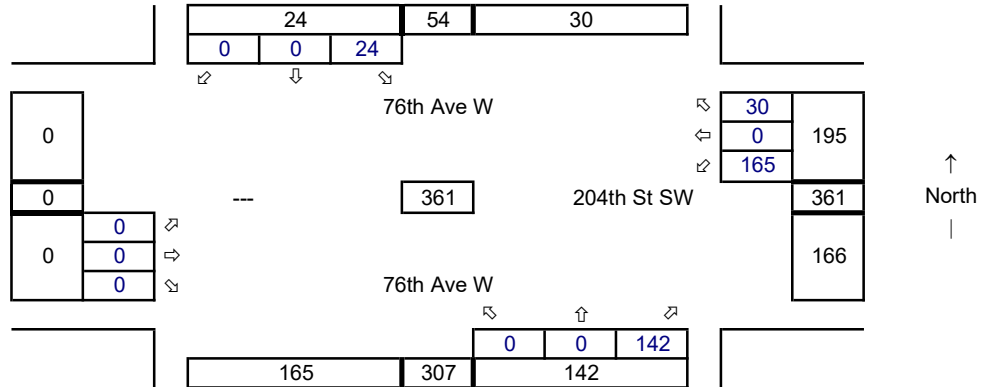
CPE Trips

Average Weekday
PM Peak Hour



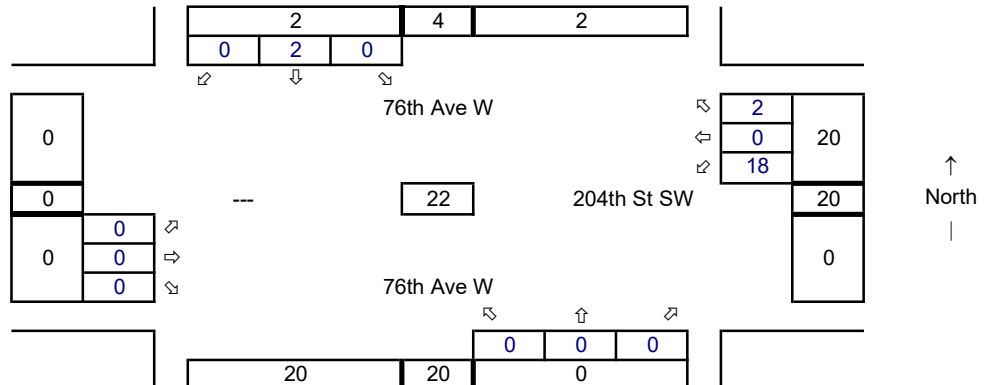
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



7 76th Ave W @ 202nd St SW

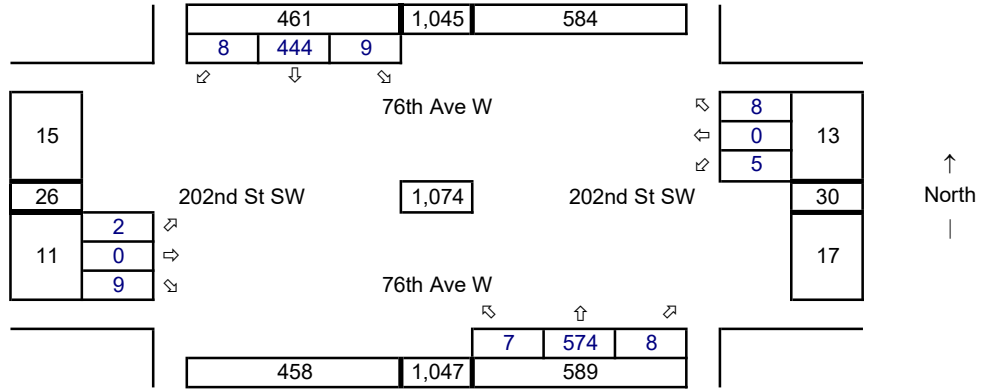
Synchro ID: 7

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

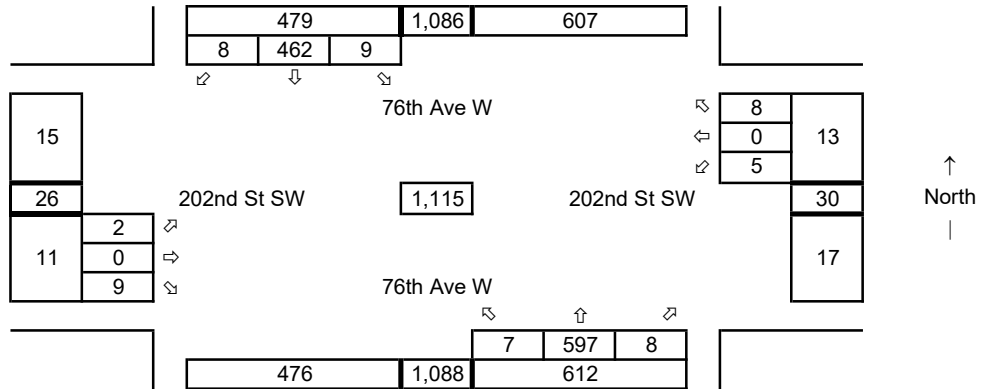
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

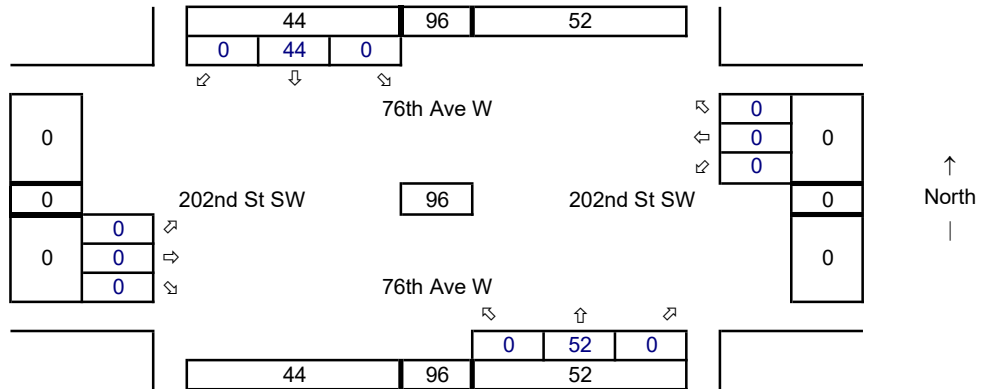
Years of Growth = 4

Total Growth = 1.0406



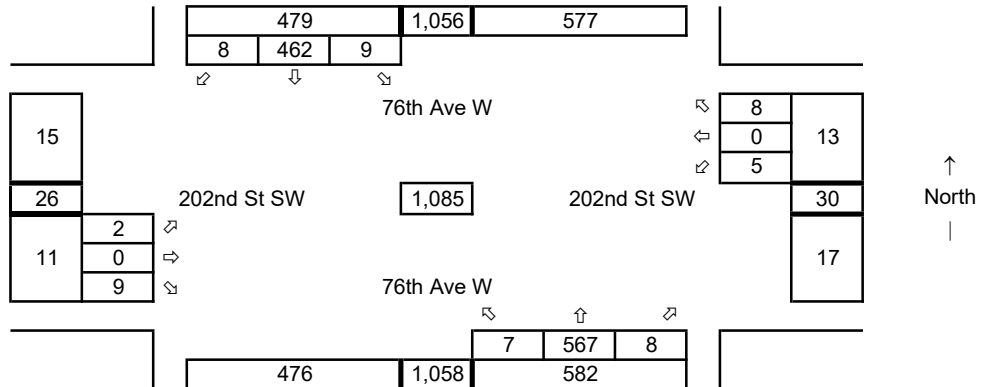
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

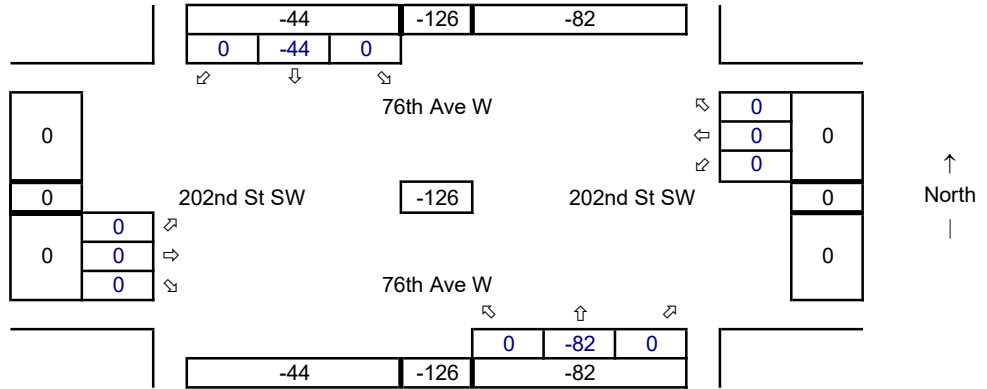
Average Weekday
PM Peak Hour



7 76th Ave W @ 202nd St SW

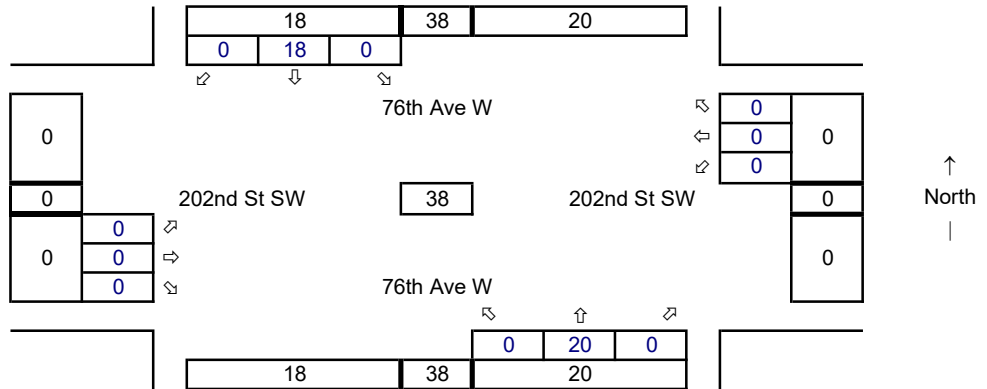
Re-Routed Project Trips

Average Weekday
PM Peak Hour



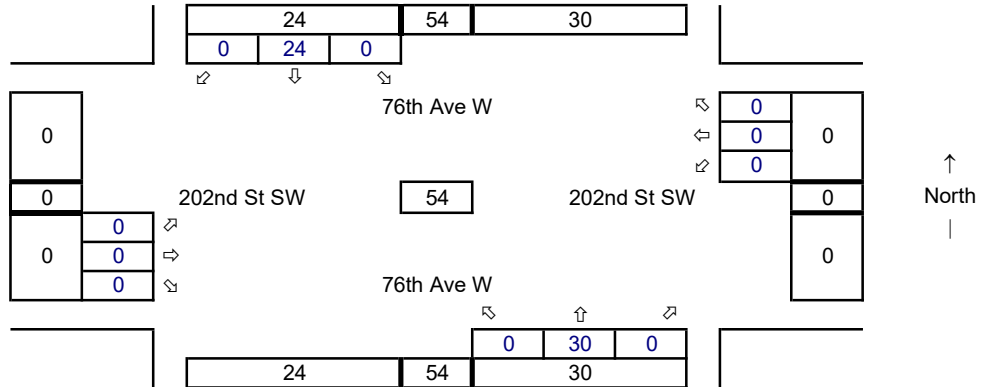
CPE Trips

Average Weekday
PM Peak Hour



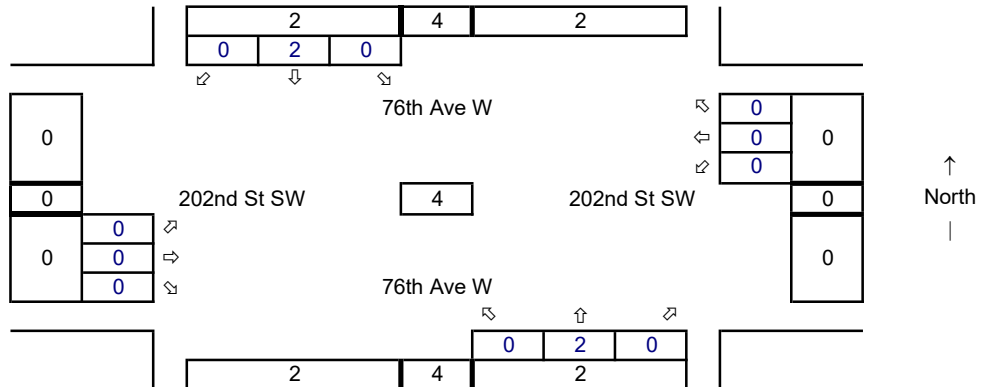
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



8 76th Ave W @ 196th St SW

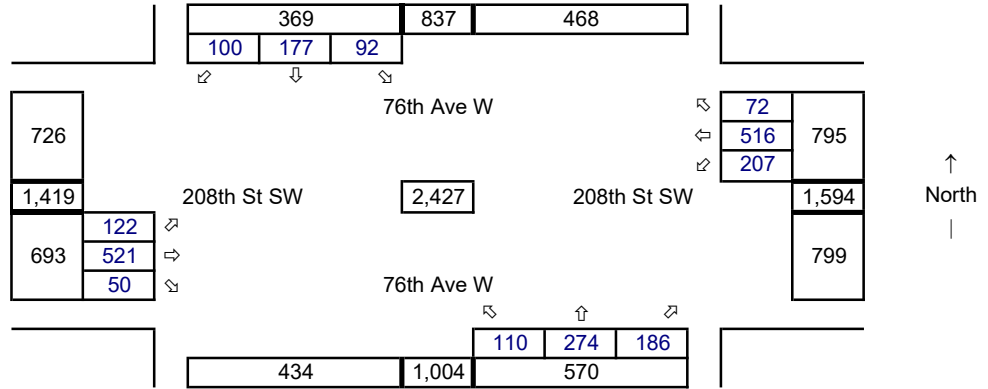
Synchro ID: 8

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

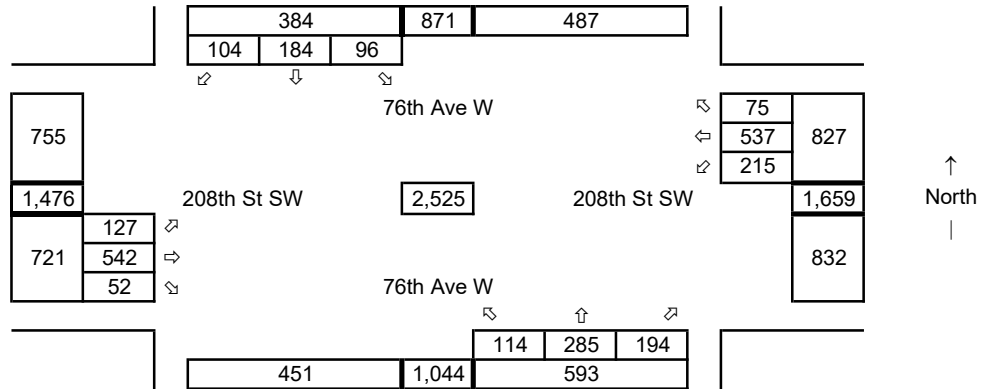
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

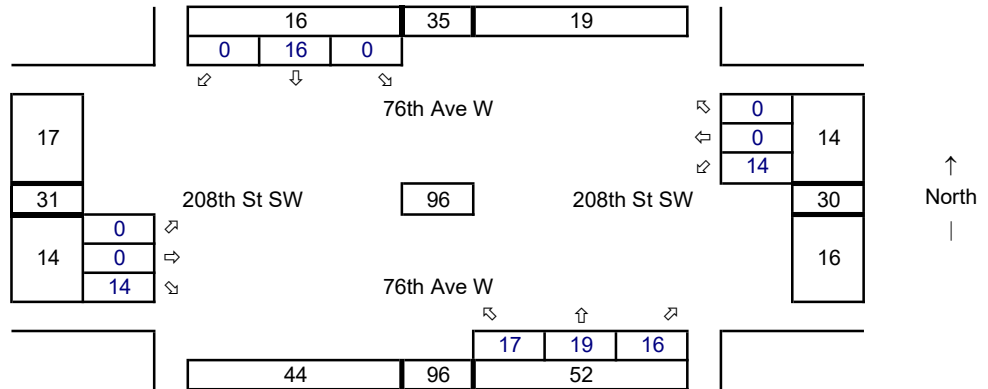
Years of Growth = 4

Total Growth = 1.0406



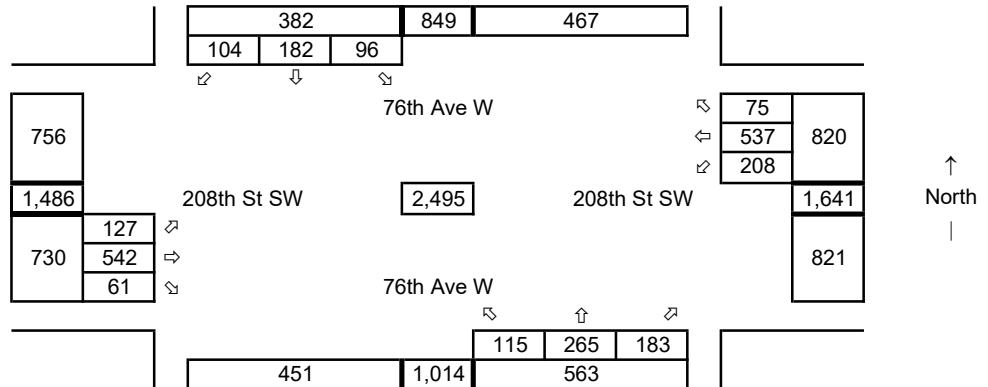
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

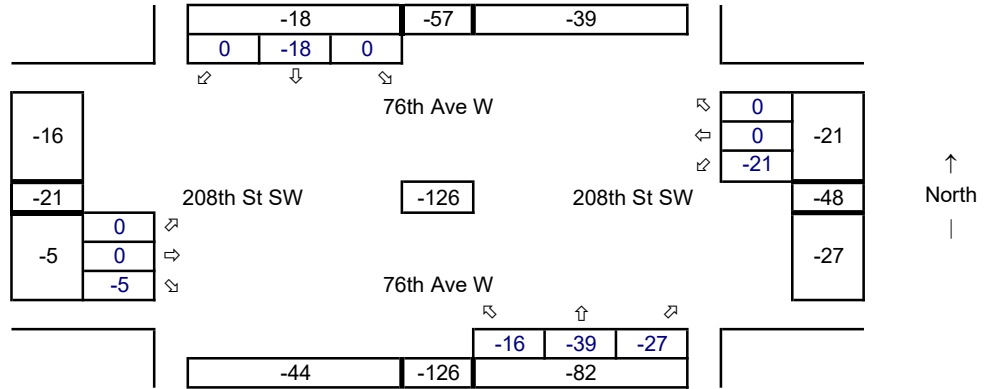
Average Weekday
PM Peak Hour



8 76th Ave W @ 196th St SW

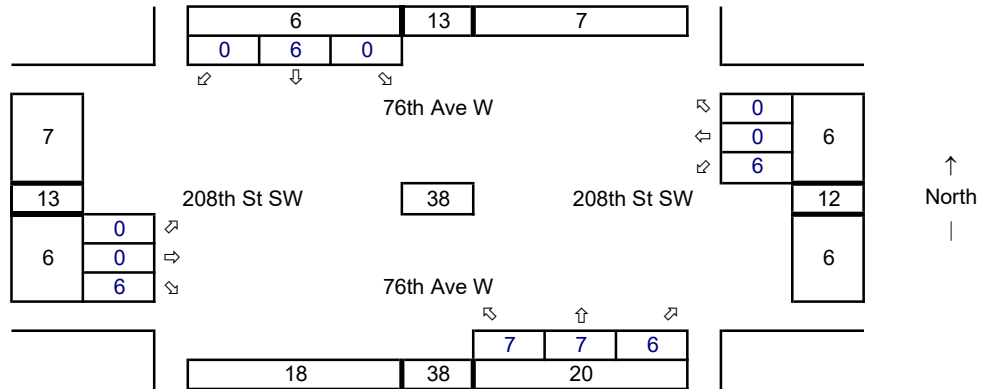
Re-Routed Project Trips

Average Weekday
PM Peak Hour



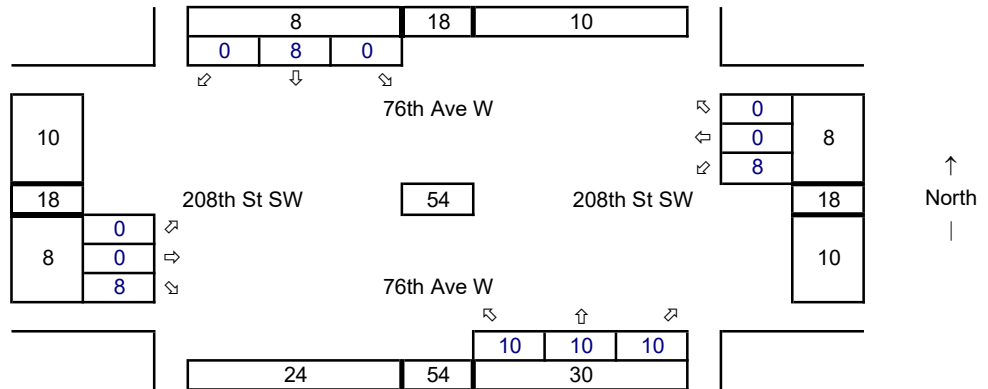
CPE Trips

Average Weekday
PM Peak Hour



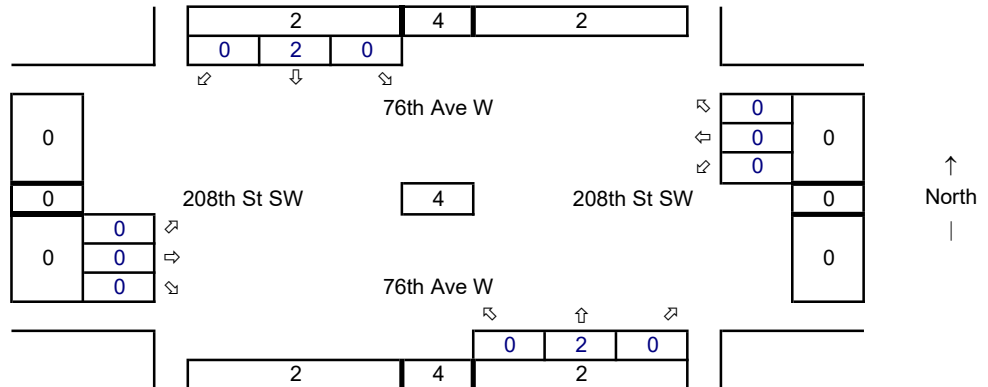
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



9 E MS Exit @ 208th St SW

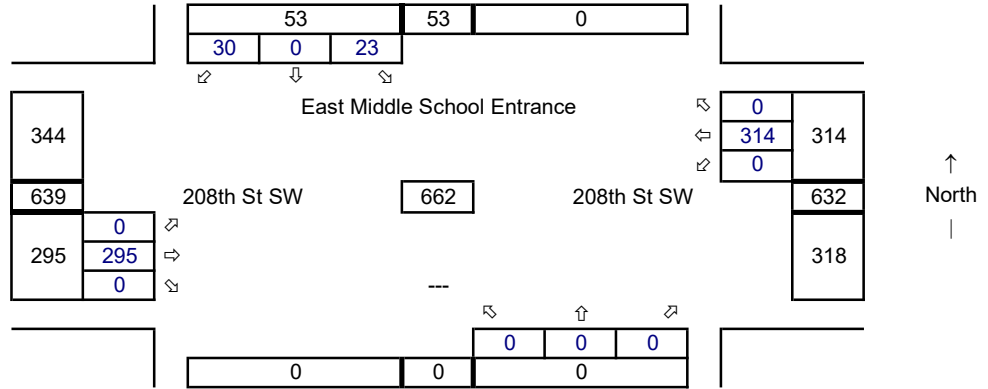
Synchro ID: 9

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

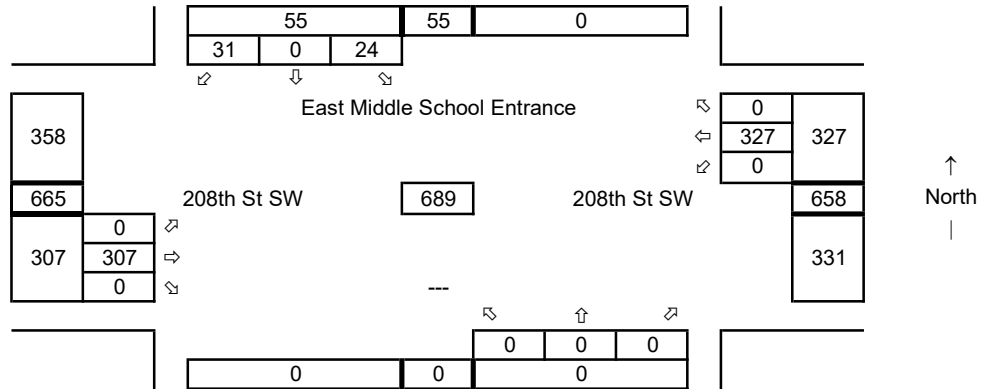
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

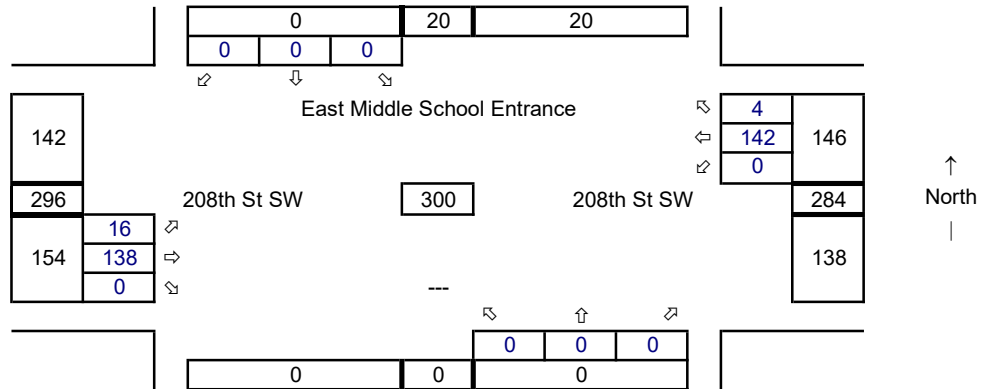
Years of Growth = 4

Total Growth = 1.0406



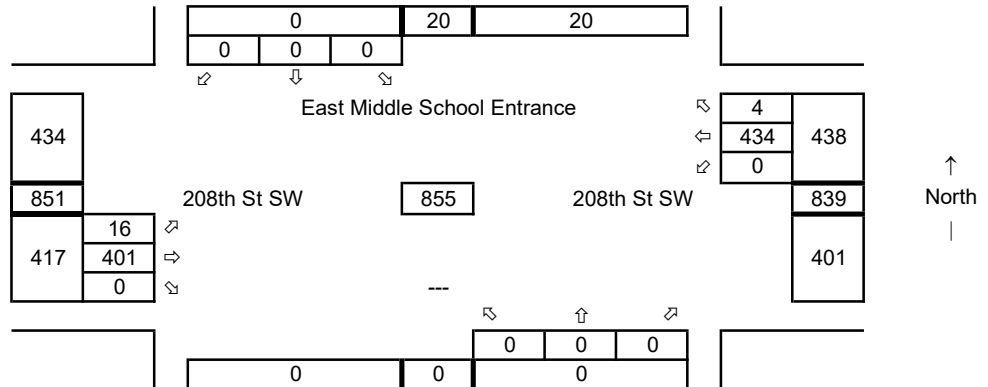
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

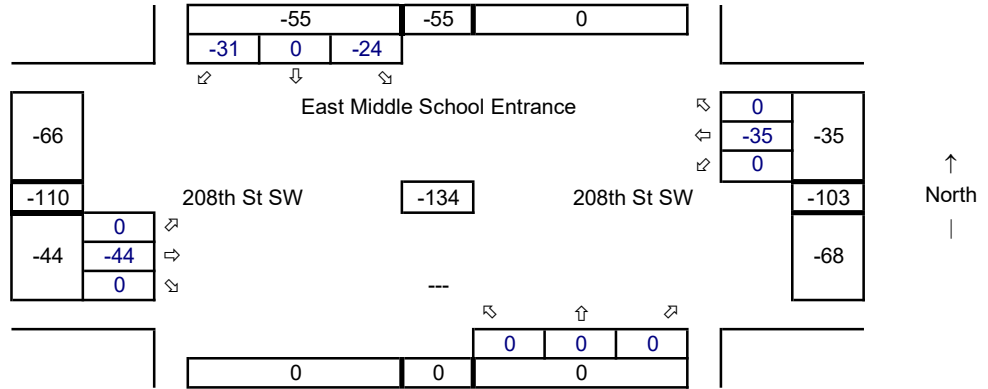
Average Weekday
PM Peak Hour



9 E MS Exit @ 208th St SW

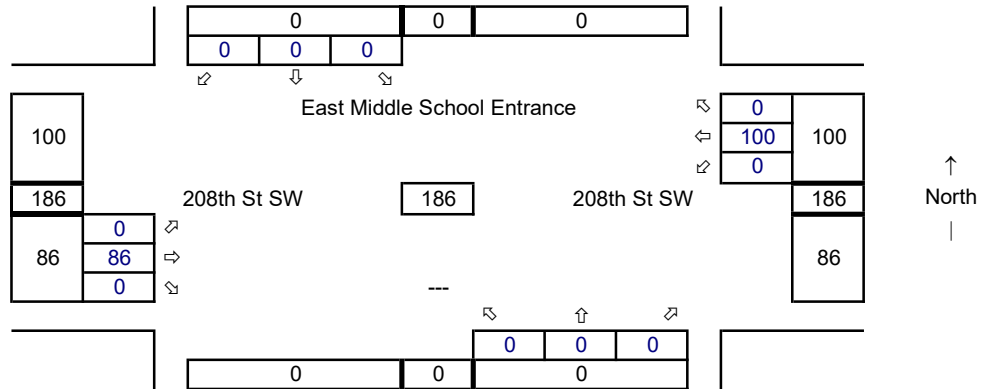
Re-Routed Project Trips

Average Weekday
PM Peak Hour



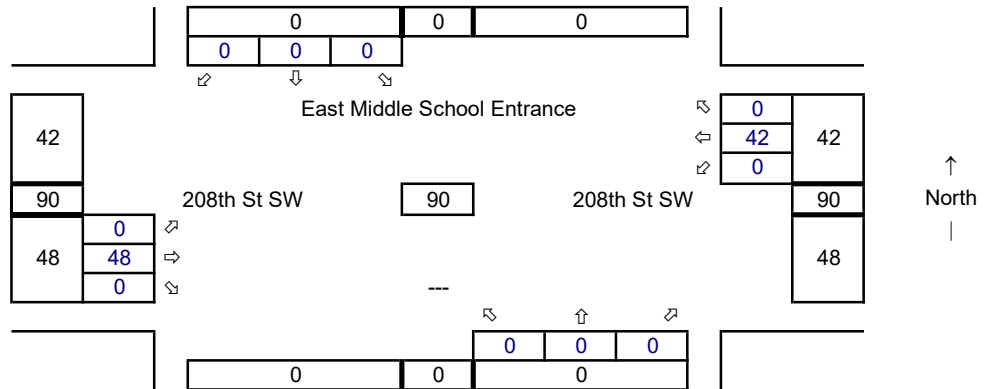
CPE Trips

Average Weekday
PM Peak Hour



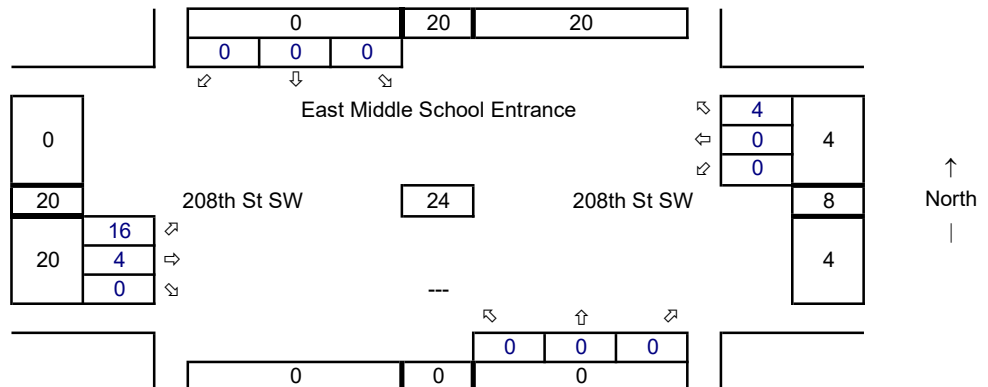
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



10 W MS Entrance @ 208th St SW

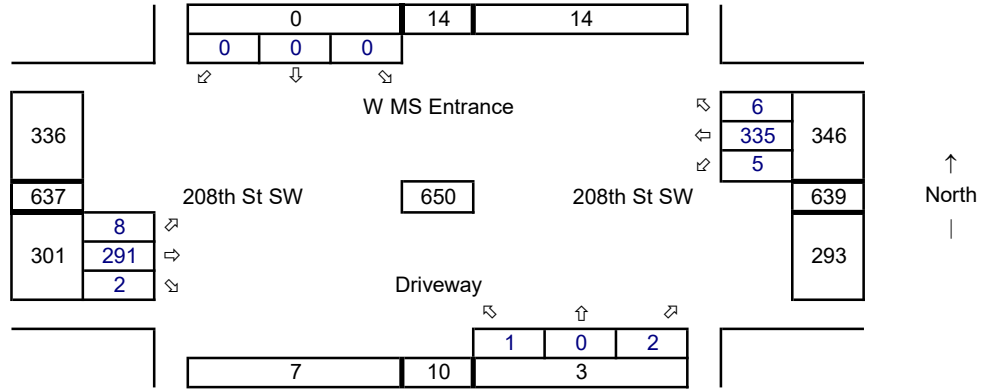
Synchro ID: 10

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

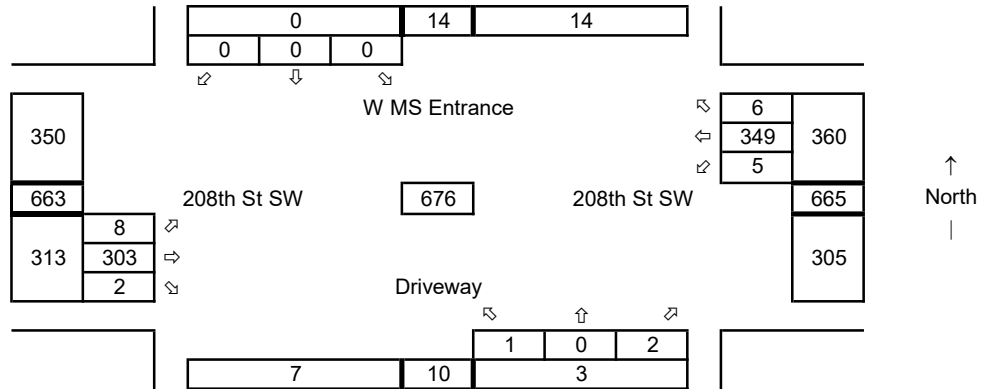
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

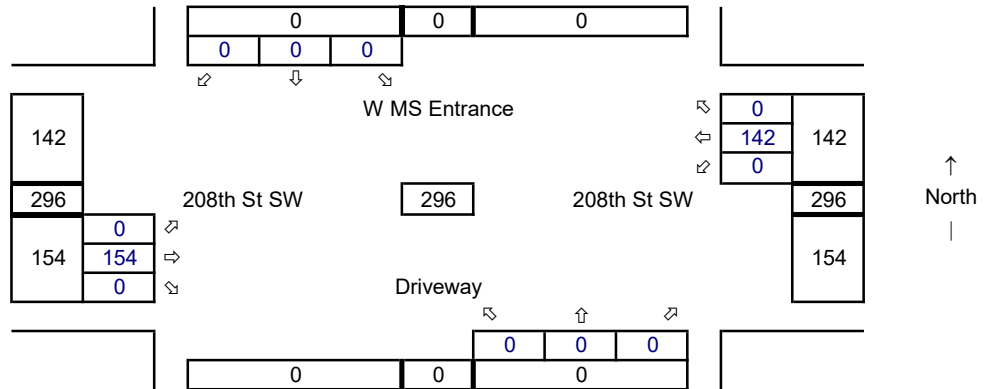
Years of Growth = 4

Total Growth = 1.0406



Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

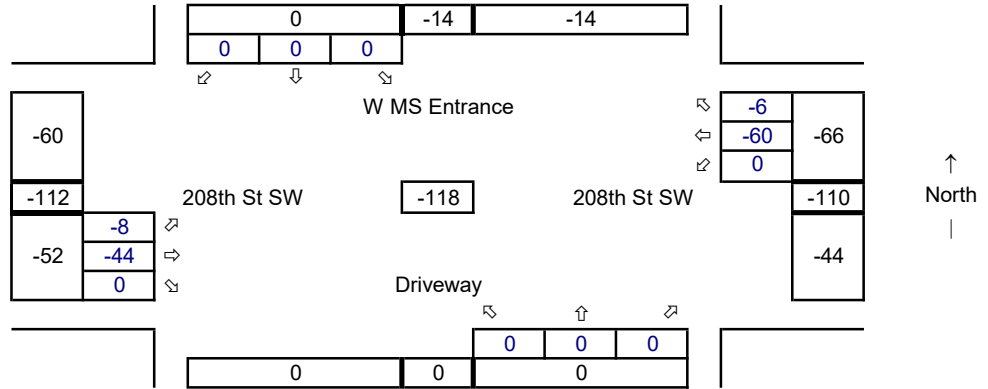
Average Weekday
PM Peak Hour



10 W MS Entrance @ 208th St SW

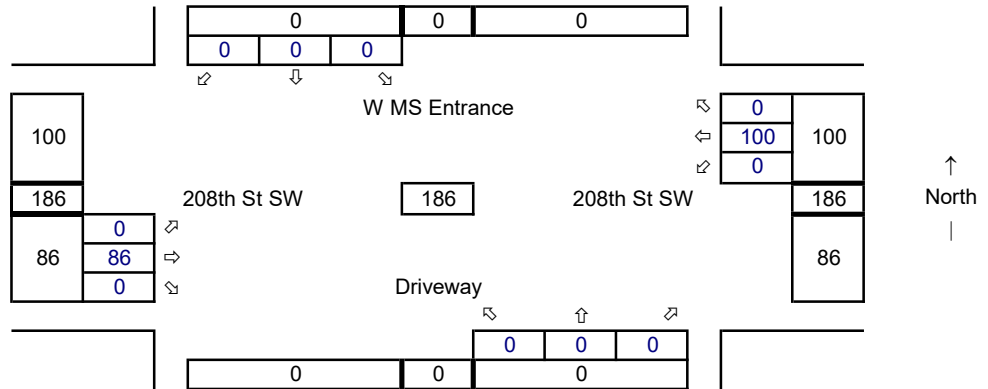
Re-Routed Project Trips

Average Weekday
PM Peak Hour



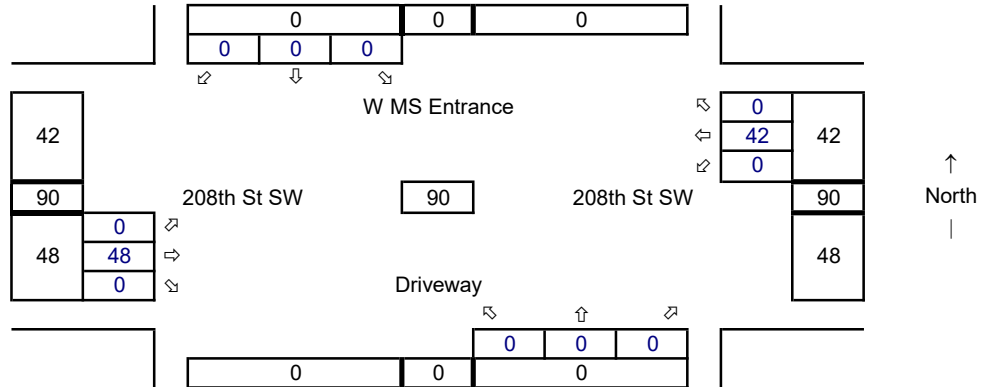
CPE Trips

Average Weekday
PM Peak Hour



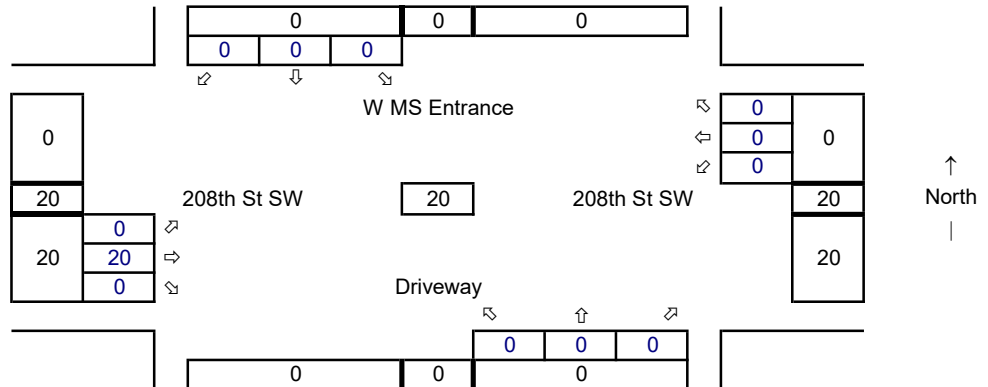
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



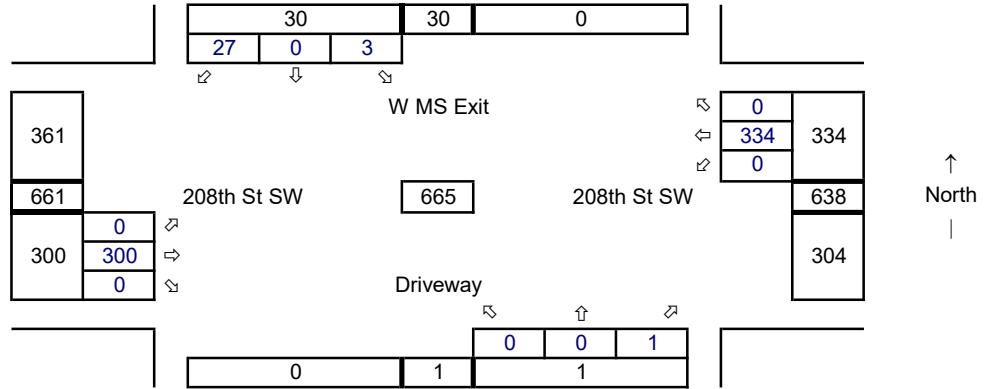
11 W MS Exit @ 208th St SW

Synchro ID: 11

Existing
Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

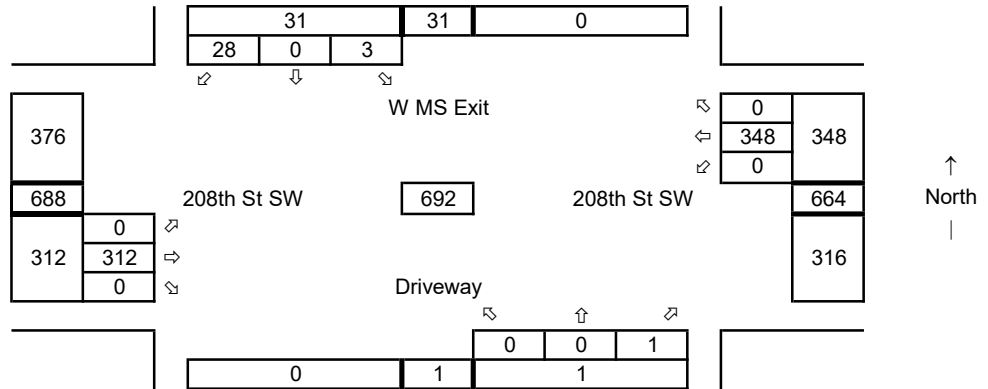
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

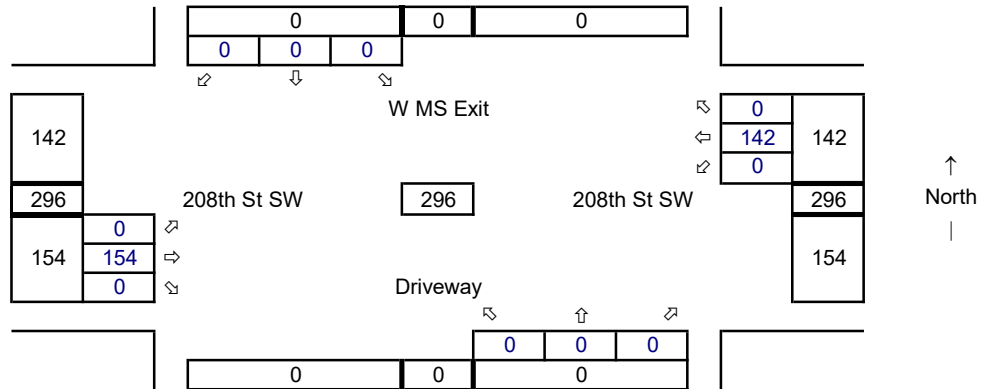
Years of Growth = 4

Total Growth = 1.0406



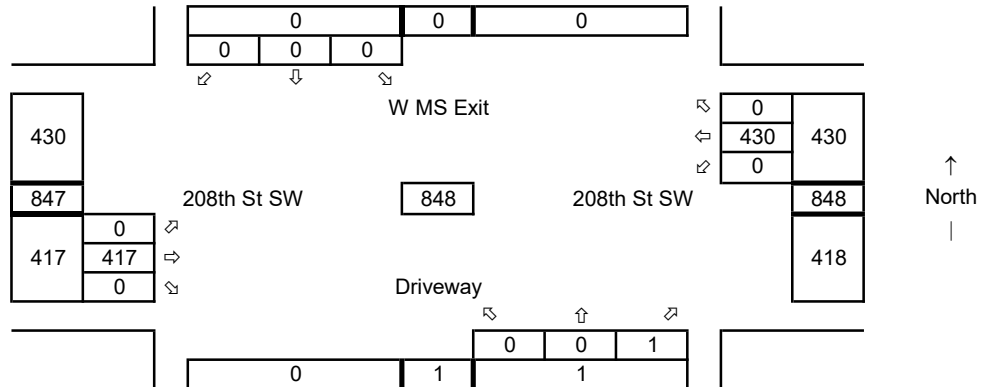
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

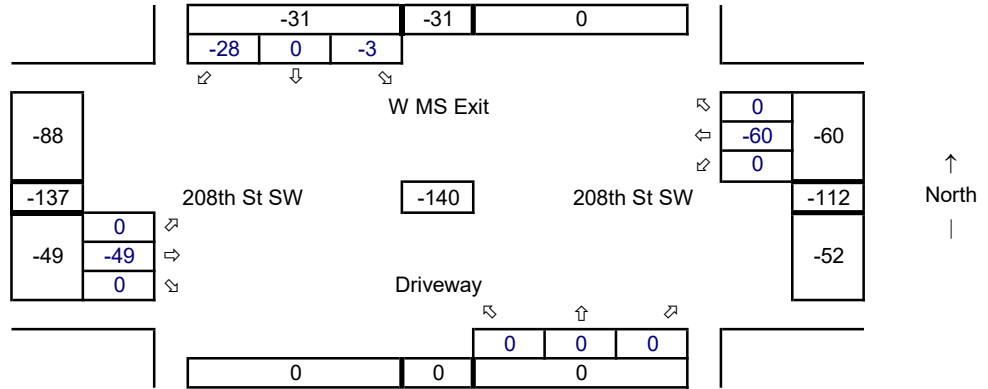
Average Weekday
PM Peak Hour



11 W MS Exit @ 208th St SW

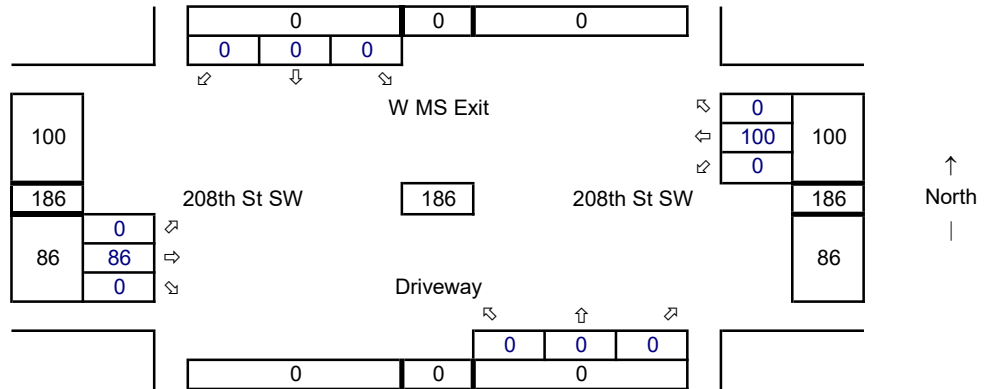
Re-Routed Project Trips

Average Weekday
PM Peak Hour



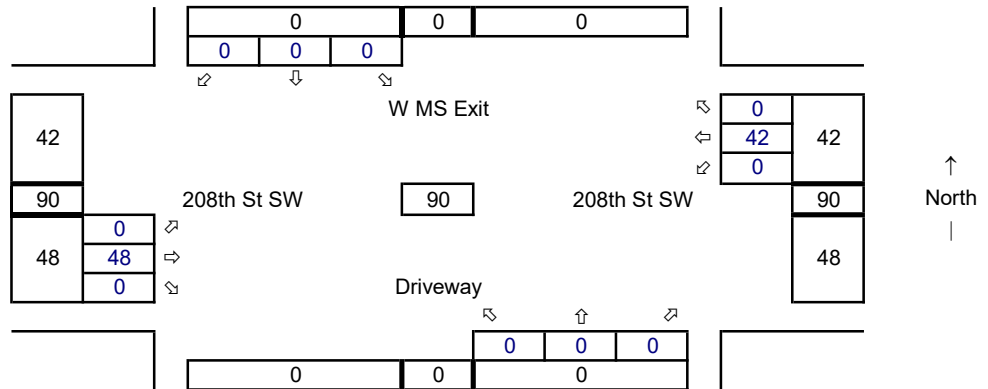
CPE Trips

Average Weekday
PM Peak Hour



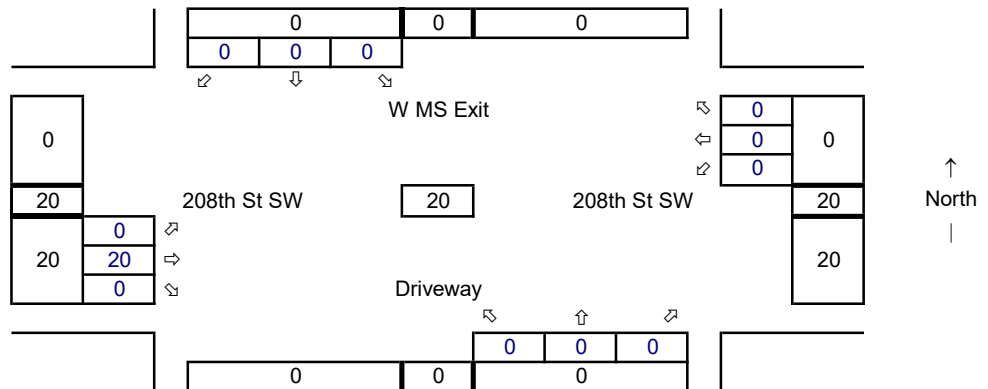
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



12 76th Ave W @ ES Entrance

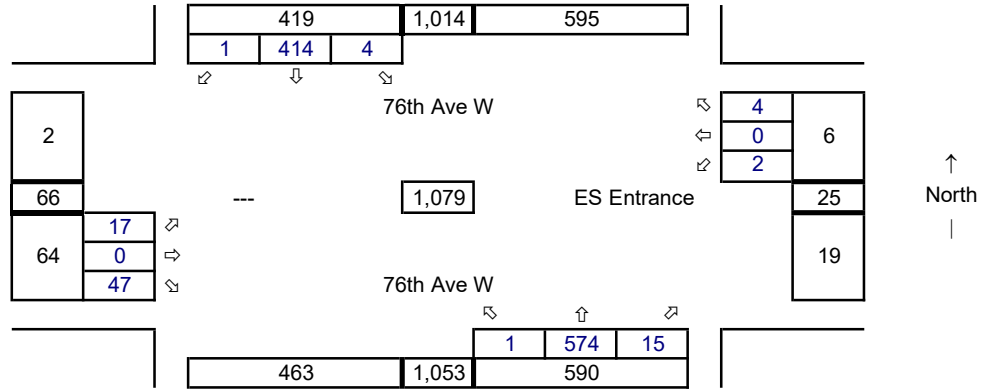
Synchro ID: 12

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

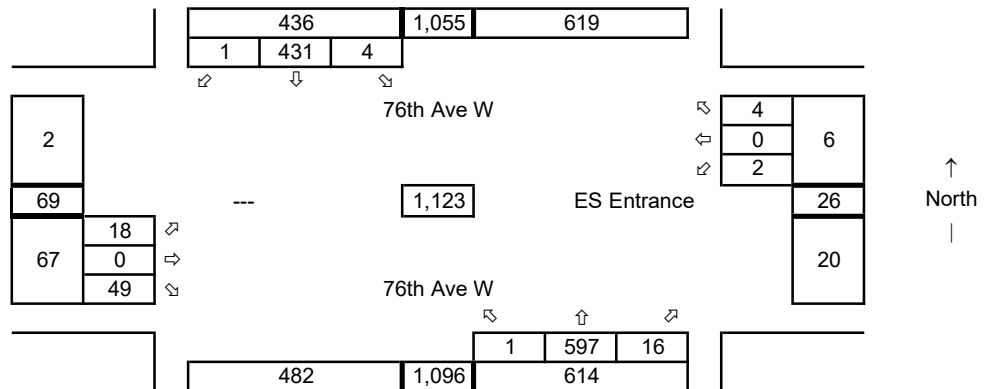
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

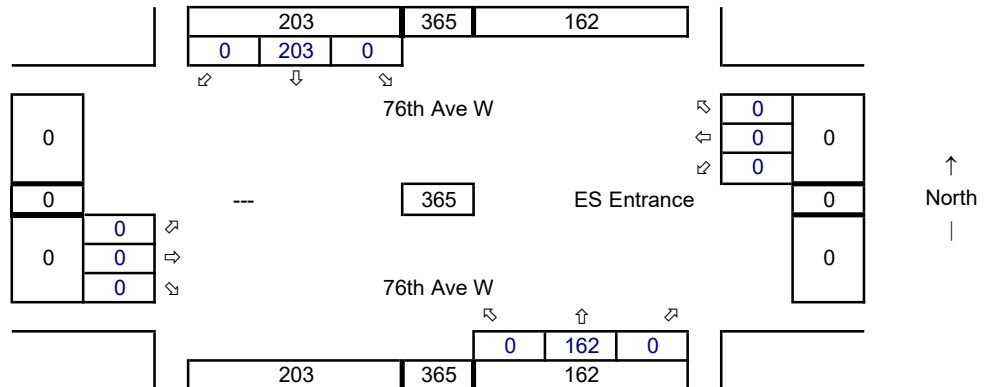
Years of Growth = 4

Total Growth = 1.0406



Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

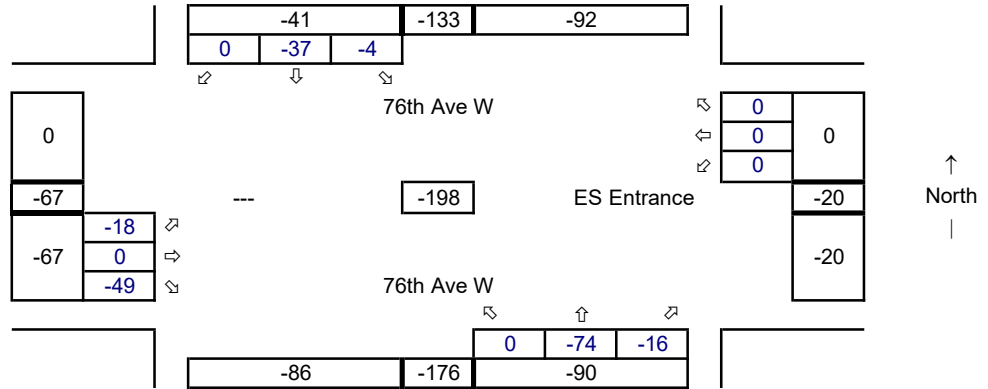
Average Weekday
PM Peak Hour



12 76th Ave W @ ES Entrance

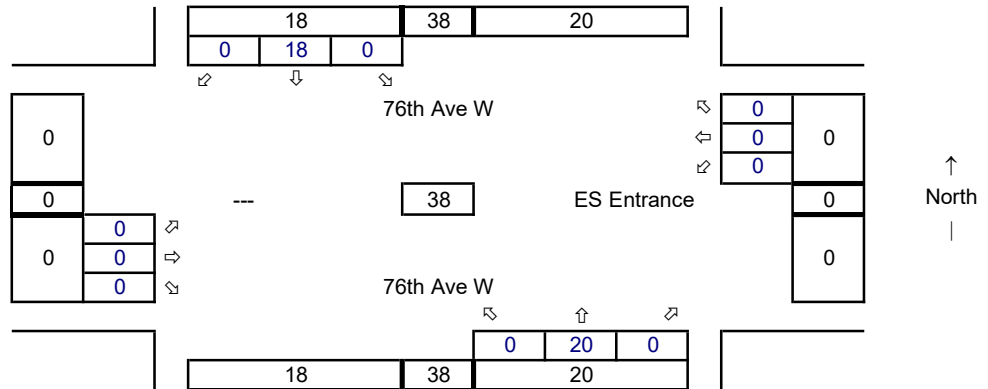
Re-Routed Project Trips

Average Weekday
PM Peak Hour



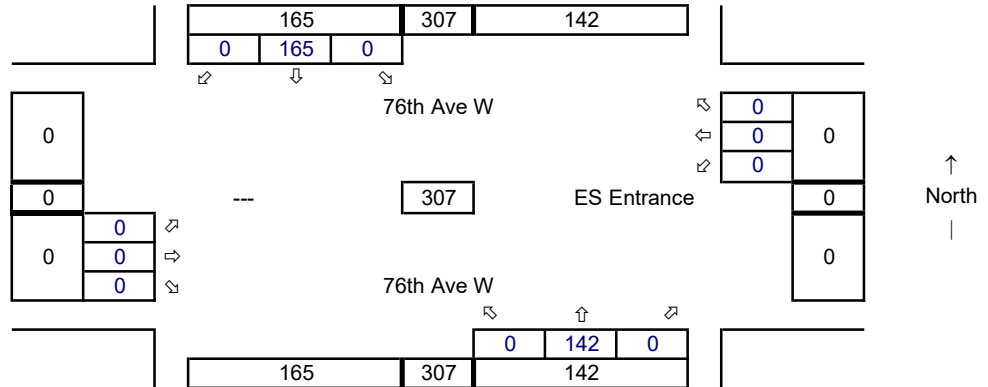
CPE Trips

Average Weekday
PM Peak Hour



CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



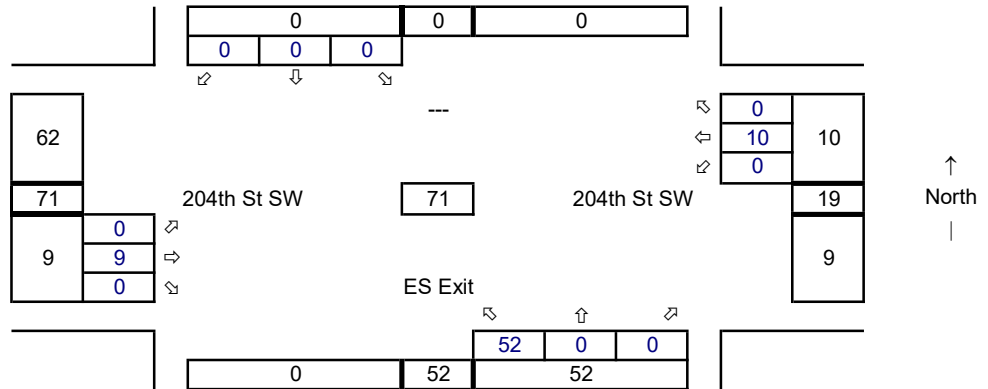
Synchro ID: 13

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: **TDG**



Future without Project

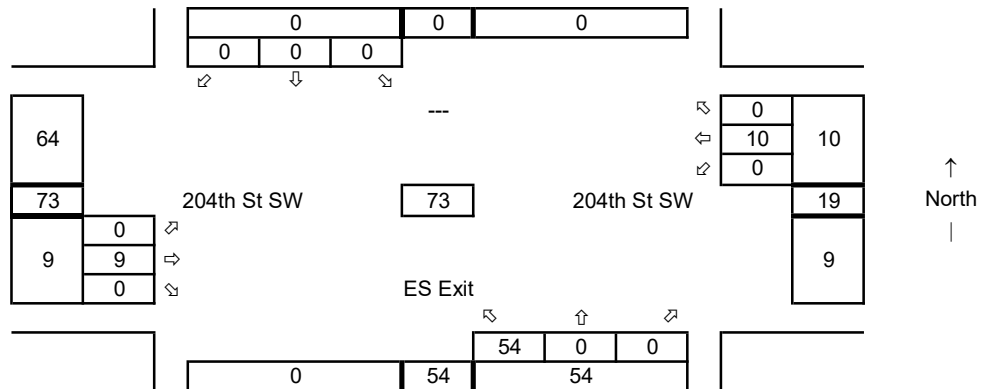
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

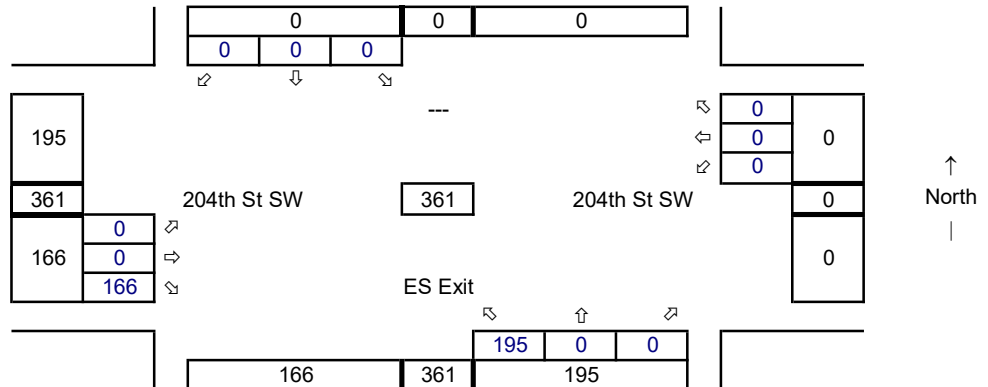
Years of Growth = 4

Total Growth = 1.0406



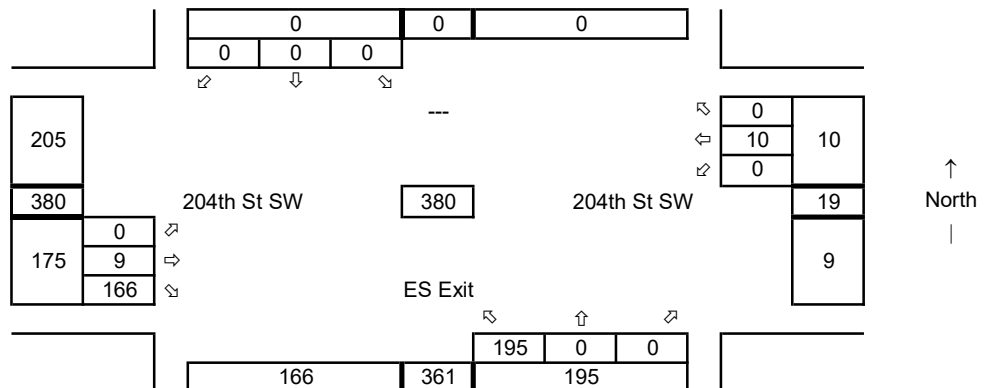
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

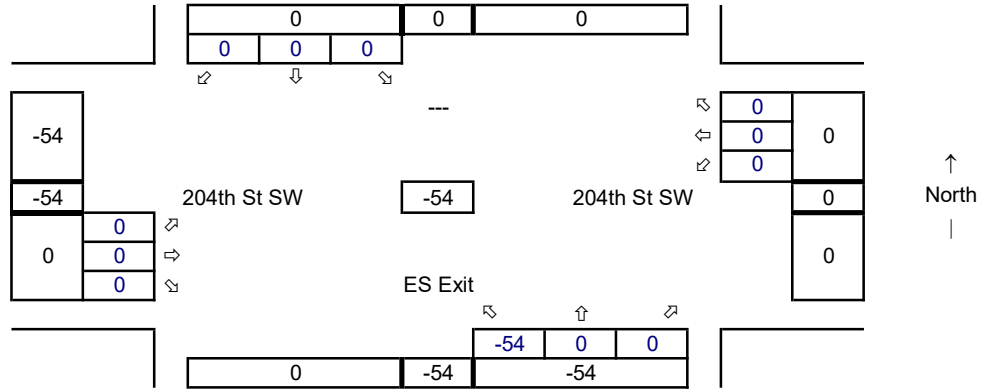
Average Weekday
PM Peak Hour



13 ES Exit @ 204th St SW

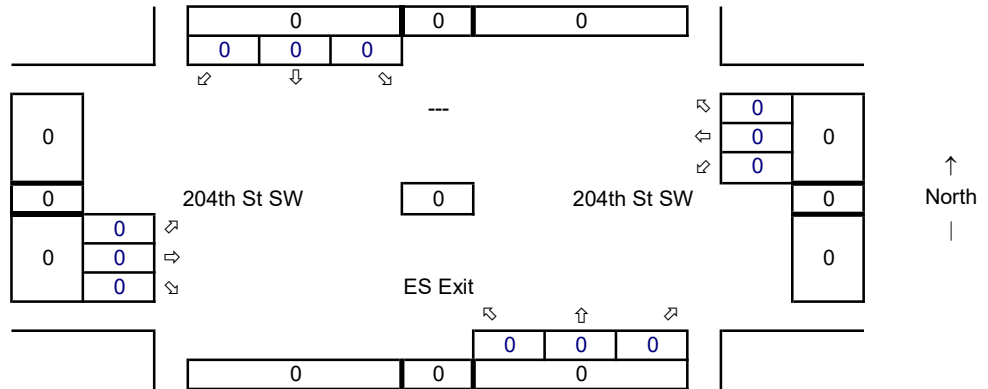
Re-Routed Project Trips

Average Weekday
PM Peak Hour



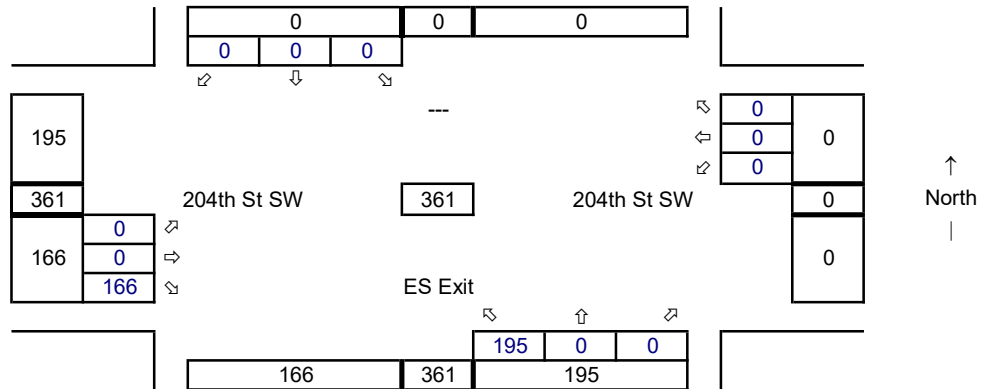
CPE Trips

Average Weekday
PM Peak Hour



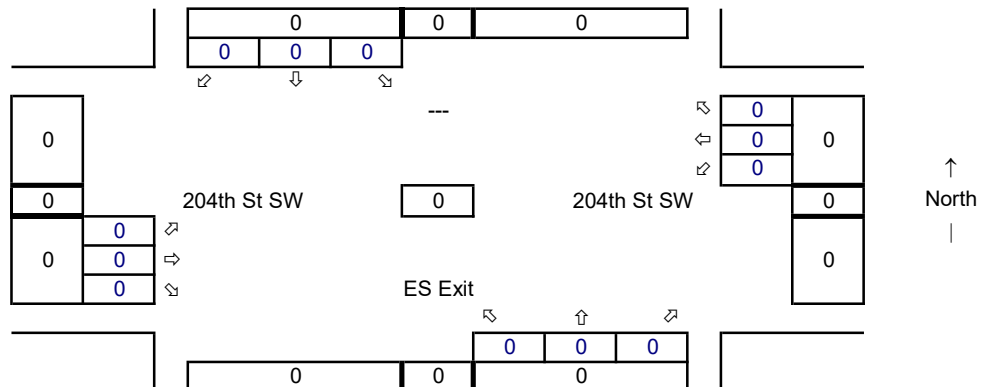
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



14 Bus Spine @ 204th St SW

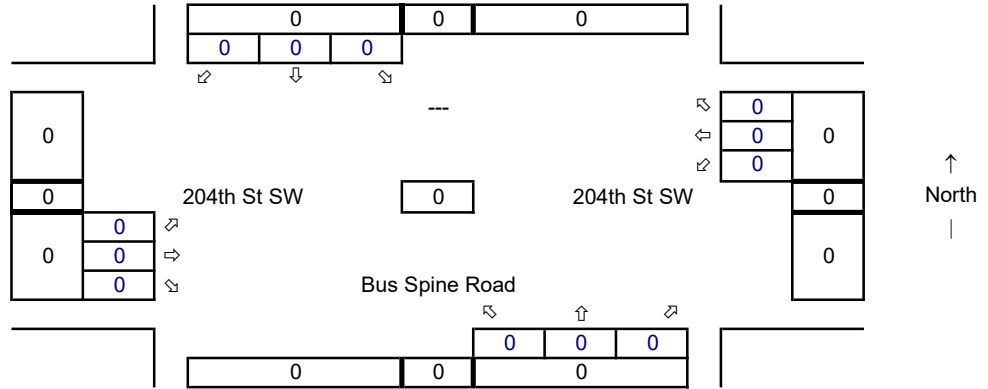
Synchro ID: 14

Existing

Average Weekday
PM Peak Hour

Year: 12/5/24

Data Source: TDG



Future without Project

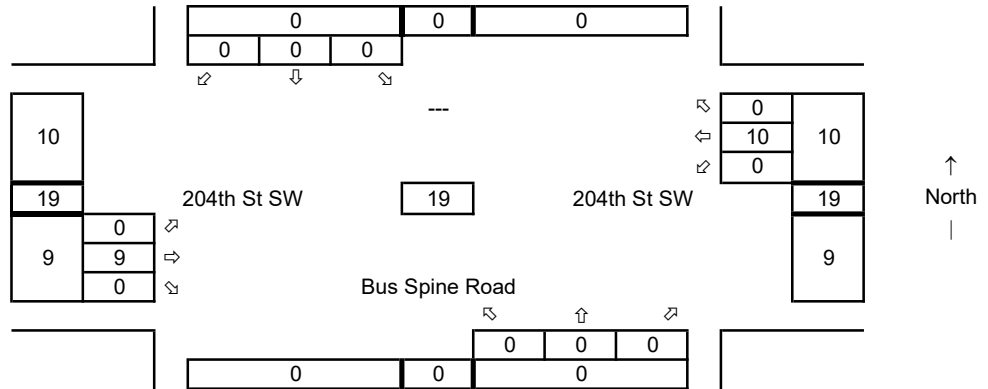
Average Weekday
PM Peak Hour

Year: 2028

Growth Rate = 1%

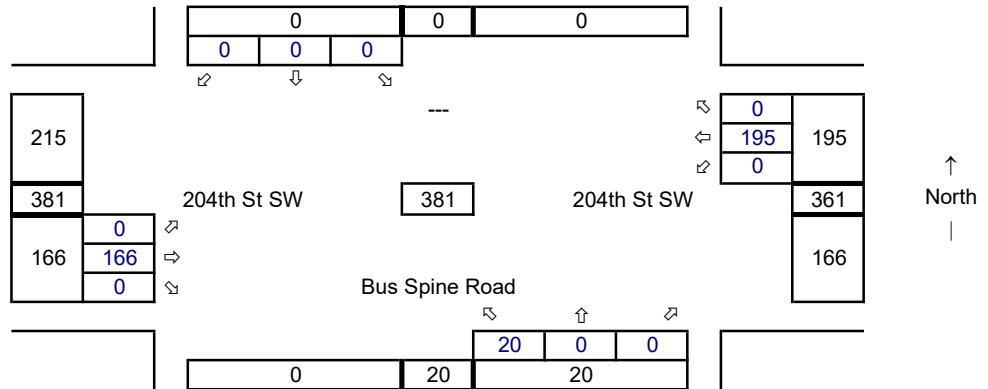
Years of Growth = 4

Total Growth = 1.0406



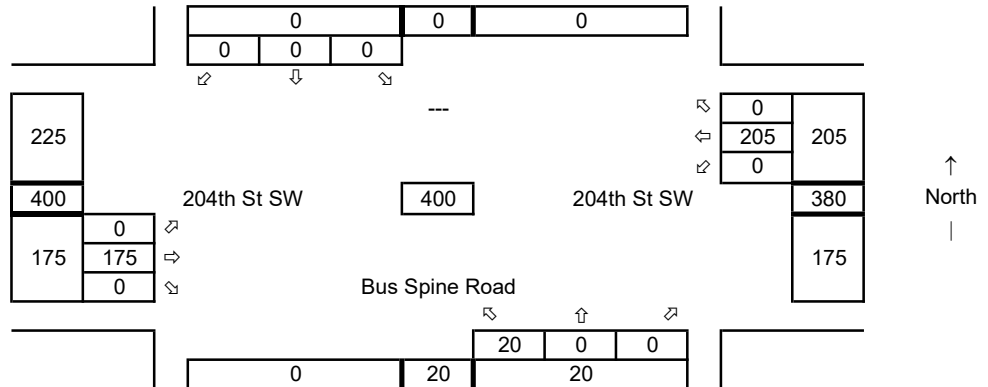
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

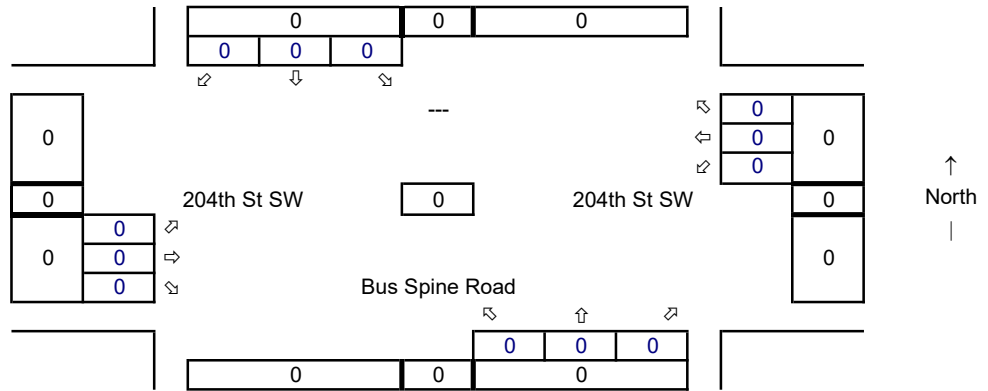
Average Weekday
PM Peak Hour



14 Bus Spine @ 204th St SW

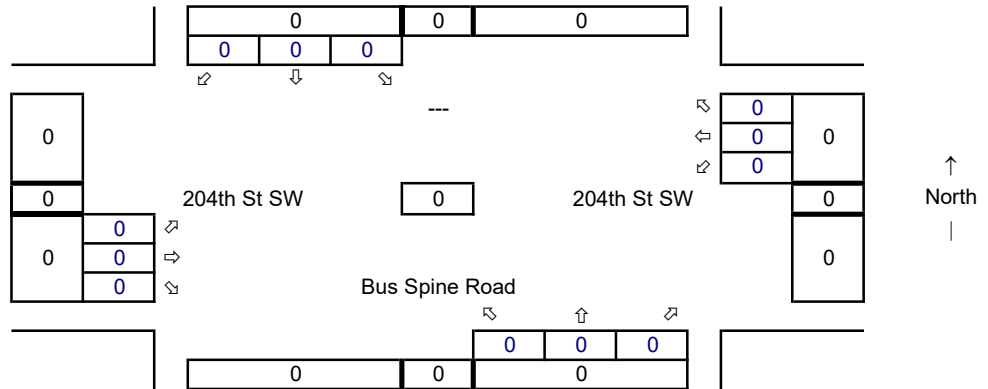
Re-Routed Project Trips

Average Weekday
PM Peak Hour



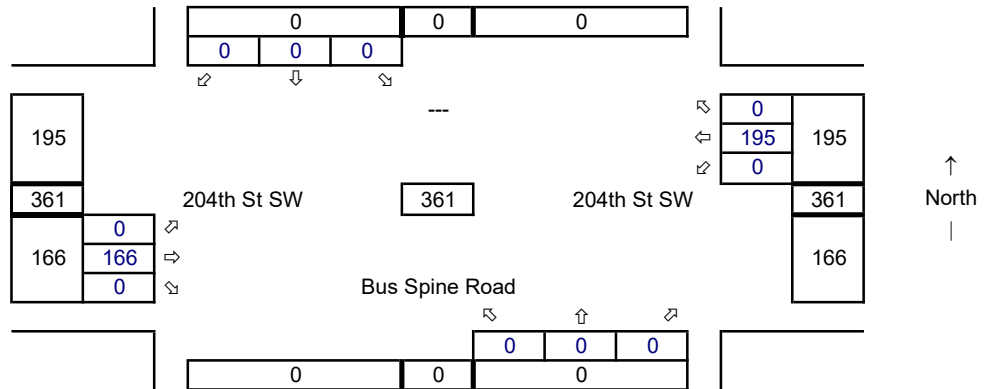
CPE Trips

Average Weekday
PM Peak Hour



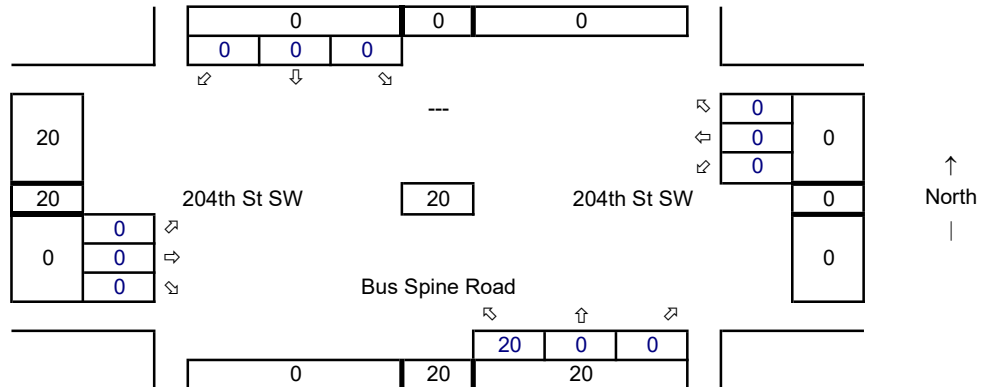
CPM Trips

Average Weekday
PM Peak Hour



Bus Trips

Average Weekday
PM Peak Hour



APPENDIX D
LEVEL OF SERVICE CALCULATIONS

Timings

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	114	52	88	192	120	72	575	33	100	1407	95
Future Volume (vph)	73	114	52	88	192	120	72	575	33	100	1407	95
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	9.0	9.0	29.5	29.5	29.5	9.0	28.5	28.5	9.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	52.0	52.0	20.0	57.0	57.0
Total Split (%)	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	10.7%	37.1%	37.1%	14.3%	40.7%	40.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.5	5.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	Max	Max

Intersection Summary

Cycle Length: 140

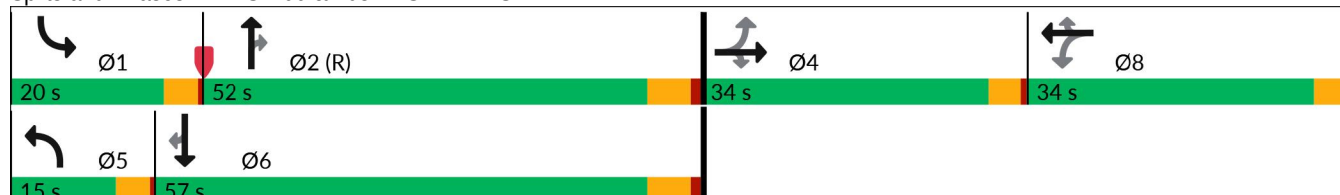
Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-99 & 208TH STREET SW



HCM 7th Signalized Intersection Summary

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	114	52	88	192	120	72	575	33	100	1407	95
Future Volume (veh/h)	73	114	52	88	192	120	72	575	33	100	1407	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1826	1826	1826	1826	1826	1826	1856	1856	1856
Adj Flow Rate, veh/h	79	124	57	96	209	130	78	625	36	109	1529	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	5	5	5	5	5	5	3	3	3
Cap, veh/h	145	357	298	212	360	301	97	2193	976	131	2294	1021
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.63	0.63	0.07	0.65	0.65
Sat Flow, veh/h	1003	1811	1514	1164	1826	1526	1739	3469	1544	1767	3526	1569
Grp Volume(v), veh/h	79	124	57	96	209	130	78	625	36	109	1529	103
Grp Sat Flow(s),veh/h/ln	1003	1811	1514	1164	1826	1526	1739	1735	1544	1767	1763	1569
Q Serve(g_s), s	10.9	8.3	4.4	10.8	14.5	10.5	6.2	11.3	1.2	8.5	37.5	3.4
Cycle Q Clear(g_c), s	25.4	8.3	4.4	19.1	14.5	10.5	6.2	11.3	1.2	8.5	37.5	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	357	298	212	360	301	97	2193	976	131	2294	1021
V/C Ratio(X)	0.55	0.35	0.19	0.45	0.58	0.43	0.80	0.29	0.04	0.83	0.67	0.10
Avail Cap(c_a), veh/h	162	388	324	232	391	327	137	2193	976	202	2294	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	48.4	46.9	56.7	51.0	49.3	65.3	11.6	9.7	63.9	15.1	9.1
Incr Delay (d2), s/veh	1.2	0.2	0.1	0.6	1.0	0.4	13.7	0.3	0.1	9.1	1.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.8	1.7	3.2	6.8	4.1	3.1	4.3	0.4	4.1	14.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.7	48.7	47.0	57.2	52.0	49.7	79.0	11.9	9.8	73.0	16.6	9.3
LnGrp LOS	E	D	D	E	D	D	E	B	A	E	B	A
Approach Vol, veh/h	260			435			739			1741		
Approach Delay, s/veh	52.9			52.4			18.9			19.7		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	94.0		31.6	11.8	96.6		31.6				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	16.0	46.5		30.0	11.0	51.5		30.0				
Max Q Clear Time (g_c+I1), s	10.5	13.3		27.4	8.2	39.5		21.1				
Green Ext Time (p_c), s	0.1	5.5		0.2	0.0	8.9		0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	26.7											
HCM 7th LOS	C											

HCM 7th TWSC
2: 208TH STREET SW & 68TH AVENUE W

CPE & CPM

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	130	241	227	128	6	162
Future Vol, veh/h	130	241	227	128	6	162
Conflicting Peds, #/hr	9	0	0	9	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	5	4	4	3	3
Mvmt Flow	163	301	284	160	8	203
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	453	0	-	0	849	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	4.175	-	-	-	6.645	6.245
Critical Hdwy Stg 1	-	-	-	-	5.445	-
Critical Hdwy Stg 2	-	-	-	-	5.845	-
Follow-up Hdwy	2.2475	-	-	-	3.5285	3.3285
Pot Cap-1 Maneuver	1088	-	-	-	313	670
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1078	-	-	-	262	664
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	584	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	3.55	0		13.56		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1078	-	-	-	-	629
HCM Lane V/C Ratio	0.151	-	-	-	-	0.334
HCM Control Delay (s/veh)	8.9	0.6	-	-	-	13.6
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	-	1.5

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↘			↕			↕	
Traffic Vol, veh/h	33	255	5	10	221	37	8	1	23	2	0	8
Future Vol, veh/h	33	255	5	10	221	37	8	1	23	2	0	8
Conflicting Peds, #/hr	15	0	7	7	0	15	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	7	7	7	5	5	5	9	9	9	20	20	20
Mvmt Flow	43	331	6	13	287	48	10	1	30	3	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	350	0	0	345	0	0	755	803	342	771	782	341
Stage 1	-	-	-	-	-	-	427	427	-	352	352	-
Stage 2	-	-	-	-	-	-	328	376	-	419	430	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.19	6.59	6.29	7.3	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.3	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.3	5.7	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.581	4.081	3.381	3.68	4.18	3.48
Pot Cap-1 Maneuver	1181	-	-	1198	-	-	316	309	685	296	306	662
Stage 1	-	-	-	-	-	-	592	573	-	629	601	-
Stage 2	-	-	-	-	-	-	670	604	-	578	554	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1165	-	-	1190	-	-	288	286	679	262	283	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	286	-	262	283	-
Stage 1	-	-	-	-	-	-	561	544	-	613	586	-
Stage 2	-	-	-	-	-	-	643	589	-	526	525	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.92			0.3			13.01			12.41		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	491	202	-	-	1190	-	-	499
HCM Lane V/C Ratio	0.085	0.037	-	-	0.011	-	-	0.026
HCM Control Delay (s/veh)	13	8.2	0	-	8.1	-	-	12.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

Timings

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	0	164	2	219	160	135	385
Future Volume (vph)	2	0	164	2	219	160	135	385
Turn Type	NA	NA	Perm	Perm	NA	Perm	D.P+P	NA
Protected Phases	4	8			6		5	2
Permitted Phases			8	6		6	6	
Detector Phase	4	8	8	6	6	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	25.0	25.0	25.0	25.5	25.5	25.5	8.0	25.5
Total Split (s)	14.0	34.0	34.0	34.5	34.5	34.5	14.0	34.5
Total Split (%)	14.5%	35.2%	35.2%	35.8%	35.8%	35.8%	14.5%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.5	4.5	4.0	4.5
Lead/Lag				Lag	Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None	Max

Intersection Summary

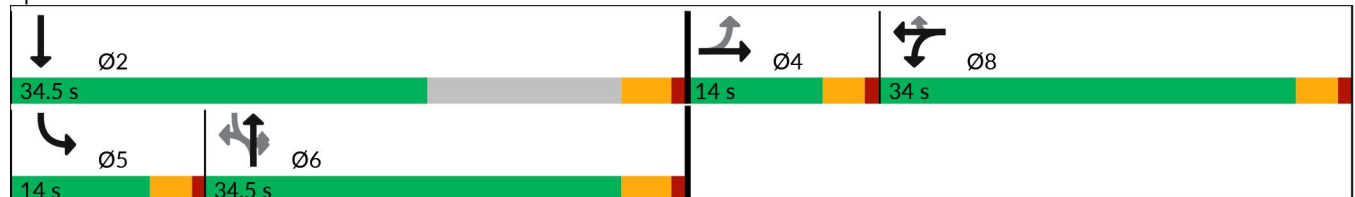
Cycle Length: 96.5

Actuated Cycle Length: 69.1

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: 76TH AVENUE W & 208TH STREET SW



HCM 7th Signalized Intersection Summary

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	2	156	0	164	2	219	160	135	385	0
Future Volume (veh/h)	0	2	2	156	0	164	2	219	160	135	385	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.96	0.99		0.95	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1811	1811	1811	1826	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	0	2	2	186	0	195	2	261	190	161	458	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	6	6	6	5	5	5	4	4	4
Cap, veh/h	0	21	21	339	0	290	56	825	669	573	1085	0
Arrive On Green	0.00	0.03	0.03	0.20	0.00	0.20	0.45	0.45	0.45	0.08	0.59	0.00
Sat Flow, veh/h	0	831	831	1725	0	1476	2	1822	1477	1753	1841	0
Grp Volume(v), veh/h	0	0	4	186	0	195	263	0	190	161	458	0
Grp Sat Flow(s),veh/h/ln	0	0	1662	1725	0	1476	1824	0	1477	1753	1841	0
Q Serve(g_s), s	0.0	0.0	0.2	6.4	0.0	8.1	0.0	0.0	5.4	3.2	9.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	6.4	0.0	8.1	6.1	0.0	5.4	3.2	9.0	0.0
Prop In Lane	0.00		0.50	1.00		1.00	0.01		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	42	339	0	290	881	0	669	573	1085	0
V/C Ratio(X)	0.00	0.00	0.09	0.55	0.00	0.67	0.30	0.00	0.28	0.28	0.42	0.00
Avail Cap(c_a), veh/h	0	0	251	781	0	668	881	0	669	704	1085	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	31.5	24.0	0.0	24.6	11.6	0.0	11.4	8.4	7.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	1.4	0.0	2.7	0.9	0.0	1.1	0.3	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	2.6	0.0	2.9	2.4	0.0	1.8	1.1	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	32.5	25.4	0.0	27.3	12.5	0.0	12.4	8.7	8.6	0.0
LnGrp LOS			C	C		C	B		B	A	A	
Approach Vol, veh/h	4		381				453			619		
Approach Delay, s/veh	32.5		26.4				12.5			8.7		
Approach LOS	C		C				B			A		
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	43.5		5.7		9.0	34.5	17.0					
Change Period (Y+Rc), s	4.5		4.0		4.0	4.5	4.0					
Max Green Setting (Gmax), s	30.0		10.0		10.0	30.0	30.0					
Max Q Clear Time (g_c+I1), s	11.0		2.2		5.2	8.1	10.1					
Green Ext Time (p_c), s	2.8		0.0		0.2	2.2	1.7					
Intersection Summary												
HCM 7th Control Delay, s/veh	14.5											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 7th TWSC
5: 76TH AVENUE W & 206TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	38	20	371	484	15
Future Vol, veh/h	18	38	20	371	484	15
Conflicting Peds, #/hr	34	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	7	7	5	5
Mvmt Flow	19	40	21	386	504	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	992	530	538	0	-	0
Stage 1	530	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.17	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.263	-	-	-
Pot Cap-1 Maneuver	275	553	1006	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	260	543	988	-	-	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	627	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v15.46		0.45	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	988	-	402	-	-
HCM Lane V/C Ratio	0.021	-	0.145	-	-
HCM Control Delay (s/veh)	8.7	-	15.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

HCM 7th TWSC
6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	34	259	13	4	486
Future Vol, veh/h	32	34	259	13	4	486
Conflicting Peds, #/hr	171	15	0	30	30	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	14	14	6	6	5	5
Mvmt Flow	36	38	288	14	4	540
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1045	340	0	0	332	0
Stage 1	325	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Critical Hdwy	6.54	6.34	-	-	4.15	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.426	-	-	2.245	-
Pot Cap-1 Maneuver	241	676	-	-	1211	-
Stage 1	706	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	195	647	-	-	1176	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v20.53			0	0.07		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	304	1176	-
HCM Lane V/C Ratio		-	-	0.241	0.004	-
HCM Control Delay (s/veh)		-	-	20.5	8.1	-
HCM Lane LOS		-	-	C	A	-
HCM 95th %tile Q(veh)		-	-	0.9	0	-

HCM 7th TWSC
7: 76TH AVENUE W & 202ND STREET SW

CPE & CPM

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	3	0	7	7	0	5	5	291	4	6	496	1
Future Vol, veh/h	3	0	7	7	0	5	5	291	4	6	496	1
Conflicting Peds, #/hr	0	0	0	0	0	0	16	0	8	8	0	16
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	4	4	4
Mvmt Flow	3	0	8	8	0	6	6	323	4	7	551	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	915	928	568	909	926	334	568	0	0	336	0	0
Stage 1	581	581	-	345	345	-	-	-	-	-	-	-
Stage 2	334	347	-	564	582	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.236	-	-
Pot Cap-1 Maneuver	255	270	526	258	271	713	980	-	-	1212	-	-
Stage 1	503	503	-	675	640	-	-	-	-	-	-	-
Stage 2	684	638	-	514	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	246	261	518	249	261	707	965	-	-	1203	-	-
Mov Cap-2 Maneuver	246	261	-	249	261	-	-	-	-	-	-	-
Stage 1	493	492	-	665	630	-	-	-	-	-	-	-
Stage 2	673	629	-	503	492	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.52		15.99	0.15	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	965	-	-	389 341	1203	-	-
HCM Lane V/C Ratio	0.006	-	-	0.029 0.039	0.006	-	-
HCM Control Delay (s/veh)	8.8	-	-	14.5 16	8	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0	-	-

Timings

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	60	450	142	475	54	104	140	76	208
Future Volume (vph)	60	450	142	475	54	104	140	76	208
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	8		4		6		2	2	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	3.0	5.0	3.0	5.0	3.0	3.0	3.0	10.0	3.0
Minimum Split (s)	7.7	24.7	7.7	24.7	7.7	24.7	24.7	14.7	24.7
Total Split (s)	23.7	44.7	23.7	44.7	23.7	63.7	63.7	23.7	63.7
Total Split (%)	15.2%	28.7%	15.2%	28.7%	15.2%	40.9%	40.9%	15.2%	40.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	4.7	3.7	4.7	3.7	3.7	3.7	3.7	3.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	Min	None

Intersection Summary

Cycle Length: 155.8

Actuated Cycle Length: 69.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 76TH AVENUE W & 196TH STREET SW

Ø1	Ø2	Ø3	Ø4
23.7 s	63.7 s	23.7 s	44.7 s
Ø5	Ø6	Ø7	Ø8
23.7 s	63.7 s	23.7 s	44.7 s

HCM 7th Signalized Intersection Summary

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	450	74	142	475	39	54	104	140	76	208	132
Future Volume (veh/h)	60	450	74	142	475	39	54	104	140	76	208	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1826	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	61	459	76	145	485	40	55	106	143	78	212	135
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	4	4	4	4	4	4	5	5	5	4	4	4
Cap, veh/h	375	812	134	407	1049	86	330	279	236	581	325	207
Arrive On Green	0.04	0.27	0.27	0.09	0.32	0.32	0.03	0.15	0.15	0.19	0.31	0.31
Sat Flow, veh/h	1753	3002	494	1753	3270	269	1739	1826	1541	1753	1050	669
Grp Volume(v), veh/h	61	266	269	145	259	266	55	106	143	78	0	347
Grp Sat Flow(s),veh/h/ln	1753	1749	1747	1753	1749	1790	1739	1826	1541	1753	0	1719
Q Serve(g_s), s	1.2	6.9	7.0	3.1	6.2	6.3	1.1	2.8	4.6	1.6	0.0	9.2
Cycle Q Clear(g_c), s	1.2	6.9	7.0	3.1	6.2	6.3	1.1	2.8	4.6	1.6	0.0	9.2
Prop In Lane	1.00		0.28	1.00		0.15	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	375	473	473	407	561	575	330	279	236	581	0	532
V/C Ratio(X)	0.16	0.56	0.57	0.36	0.46	0.46	0.17	0.38	0.61	0.13	0.00	0.65
Avail Cap(c_a), veh/h	976	1327	1326	920	1327	1359	932	2079	1755	914	0	1957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	16.5	16.6	12.4	14.3	14.3	12.6	20.1	20.8	12.0	0.0	15.8
Incr Delay (d2), s/veh	0.1	1.5	1.5	0.2	0.8	0.8	0.1	0.8	2.5	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.6	2.6	1.0	2.2	2.3	0.4	1.1	1.6	0.6	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	18.0	18.1	12.6	15.1	15.1	12.7	20.9	23.4	12.0	0.0	16.3
LnGrp LOS	B	B	B	B	B	B	B	C	C	B		B
Approach Vol, veh/h	596			670			304			425		
Approach Delay, s/veh	17.4			14.6			20.6			15.5		
Approach LOS	B			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	11.8	8.3	19.0	5.5	20.0	5.6	21.6				
Change Period (Y+Rc), s	3.7	3.7	3.7	4.7	3.7	3.7	3.7	4.7				
Max Green Setting (Gmax), s	20.0	60.0	20.0	40.0	20.0	60.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s	3.6	6.6	5.1	9.0	3.1	11.2	3.2	8.3				
Green Ext Time (p_c), s	0.1	1.1	0.2	4.9	0.0	1.5	0.0	4.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	16.5											
HCM 7th LOS	B											

HCM 7th TWSC
9: 208TH STREET SW & EAST MS EXIT

CPE & CPM

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	266	240	0	26	33
Future Vol, veh/h	0	266	240	0	26	33
Conflicting Peds, #/hr	16	0	0	16	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	5	5	6	6	12	12
Mvmt Flow	0	350	316	0	34	43
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	666	319
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	-	-	-	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	-	-	3.608	3.408
Pot Cap-1 Maneuver	0	-	-	0	409	699
Stage 1	0	-	-	0	717	-
Stage 2	0	-	-	0	692	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	409	697
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	692	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		12.91		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	532			
HCM Lane V/C Ratio	-	-	0.146			
HCM Control Delay (s/veh)	-	-	12.9			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.5			

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	267	1	3	211	38	3	0	6	0	0	0
Future Vol, veh/h	73	267	1	3	211	38	3	0	6	0	0	0
Conflicting Peds, #/hr	10	0	4	4	0	10	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	4	4	4	5	5	5	0	0	0	0	0	0
Mvmt Flow	100	366	1	4	289	52	4	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	351	0	0	371	0	0	869	930	372
Stage 1	-	-	-	-	-	-	570	570	-
Stage 2	-	-	-	-	-	-	298	359	-
Critical Hdwy	4.14	-	-	4.15	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.236	-	-	2.245	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1197	-	-	1171	-	-	325	269	678
Stage 1	-	-	-	-	-	-	570	508	-
Stage 2	-	-	-	-	-	-	757	630	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1197	-	-	1167	-	-	295	0	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	0	-
Stage 1	-	-	-	-	-	-	520	0	-
Stage 2	-	-	-	-	-	-	753	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	1.77	0.1	12.83
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	472	1197	-	-	21	-	-
HCM Lane V/C Ratio	0.026	0.084	-	-	0.004	-	-
HCM Control Delay (s/veh)	12.8	8.3	-	-	8.1	0	-
HCM Lane LOS	B	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	307	1	0	217	0	1	0	0	26	0	84
Future Vol, veh/h	0	307	1	0	217	0	1	0	0	26	0	84
Conflicting Peds, #/hr	8	0	3	3	0	8	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	7	7	7	0	0	0	1	1	1
Mvmt Flow	0	445	1	0	314	0	1	0	0	38	0	122

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	449	0	0	609	763	450	760	764	160
Stage 1	-	-	-	-	-	-	449	449	-	314	314	-
Stage 2	-	-	-	-	-	-	160	314	-	446	449	-
Critical Hdwy	-	-	-	4.205	-	-	7.3	6.5	6.2	7.315	6.515	6.915
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.515	5.515	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.115	5.515	-
Follow-up Hdwy	-	-	-	2.2665	-	-	3.5	4	3.3	3.5095	4.0095	3.3095
Pot Cap-1 Maneuver	0	-	-	1079	-	0	396	337	614	310	335	860
Stage 1	0	-	-	-	-	0	593	576	-	674	657	-
Stage 2	0	-	-	-	-	0	832	660	-	593	573	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1076	-	-	338	336	611	310	334	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	338	336	-	310	334	-
Stage 1	-	-	-	-	-	-	592	574	-	674	657	-
Stage 2	-	-	-	-	-	-	712	660	-	592	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	15.69	13.07
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	338	-	-	1076	-	605
HCM Lane V/C Ratio	0.004	-	-	-	-	0.264
HCM Control Delay (s/veh)	15.7	-	-	0	-	13.1
HCM Lane LOS	C	-	-	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	1.1

HCM 7th TWSC
12: 76TH AVENUE W & DRIVEWAY/ES

CPE & CPM

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		W						T			T	
Traffic Vol, veh/h	14	0	45	0	0	0	1	332	57	29	441	0
Future Vol, veh/h	14	0	45	0	0	0	1	332	57	29	441	0
Conflicting Peds, #/hr	4	0	0	0	0	4	4	0	6	6	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	6	6	6
Mvmt Flow	15	0	47	0	0	0	1	346	59	30	459	0

Major/Minor	Minor2			Major1		Major2			
Conflicting Flow All	876	937	463	463	0	0	411	0	0
Stage 1	524	524	-	-	-	-	-	-	-
Stage 2	352	413	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.17	-	-	4.16	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.263	-	-	2.254	-	-
Pot Cap-1 Maneuver	322	267	603	1072	-	-	1126	-	0
Stage 1	598	533	-	-	-	-	-	-	0
Stage 2	716	597	-	-	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	311	0	601	1068	-	-	1126	-	-
Mov Cap-2 Maneuver	311	0	-	-	-	-	-	-	-
Stage 1	595	0	-	-	-	-	-	-	-
Stage 2	695	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v13.37		0.02	0.51
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	1068	-	-	492	1126	-
HCM Lane V/C Ratio	0.001	-	-	0.125	0.027	-
HCM Control Delay (s/veh)	8.4	-	-	13.4	8.3	-
HCM Lane LOS	A	-	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	-

HCM 7th TWSC
13: ES & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	6.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	W	
Traffic Vol, veh/h	17	0	0	11	56	2
Future Vol, veh/h	17	0	0	11	56	2
Conflicting Peds, #/hr	0	143	143	0	5	12
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	16	16
Mvmt Flow	21	0	0	14	70	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	40	33
Stage 1	-	-	-	21	-
Stage 2	-	-	-	19	-
Critical Hdwy	-	-	-	6.56	6.36
Critical Hdwy Stg 1	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	5.56	-
Follow-up Hdwy	-	-	-	3.644	3.444
Pot Cap-1 Maneuver	-	0	0	937	1001
Stage 1	-	0	0	966	-
Stage 2	-	0	0	969	-
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	-	-	-	933	990
Mov Cap-2 Maneuver	-	-	-	933	-
Stage 1	-	-	-	966	-
Stage 2	-	-	-	964	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	9.18
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	935	-	-
HCM Lane V/C Ratio	0.078	-	-
HCM Control Delay (s/veh)	9.2	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Timings

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	145	39	68	169	115	76	1357	71	101	1050	99
Future Volume (vph)	127	145	39	68	169	115	76	1357	71	101	1050	99
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	9.0	9.0	29.5	29.5	29.5	9.0	28.5	28.5	9.0	28.5	28.5
Total Split (s)	22.0	22.0	22.0	29.0	29.0	29.0	18.0	54.0	54.0	15.0	51.0	51.0
Total Split (%)	18.3%	18.3%	18.3%	24.2%	24.2%	24.2%	15.0%	45.0%	45.0%	12.5%	42.5%	42.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.5	5.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	Max	Max

Intersection Summary

Cycle Length: 120

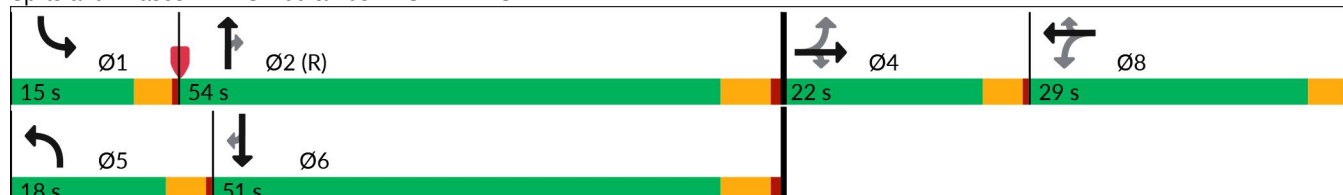
Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-99 & 208TH STREET SW



HCM 7th Signalized Intersection Summary

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	145	39	68	169	115	76	1357	71	101	1050	99
Future Volume (veh/h)	127	145	39	68	169	115	76	1357	71	101	1050	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.95	0.98		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	132	151	41	71	176	120	79	1414	74	105	1094	103
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	3	3	3
Cap, veh/h	149	318	256	173	318	255	100	2285	1010	129	2326	1028
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.06	0.64	0.64	0.07	0.66	0.66
Sat Flow, veh/h	1054	1856	1492	1154	1856	1490	1781	3554	1570	1767	3526	1558
Grp Volume(v), veh/h	132	151	41	71	176	120	79	1414	74	105	1094	103
Grp Sat Flow(s),veh/h/ln	1054	1856	1492	1154	1856	1490	1781	1777	1570	1767	1763	1558
Q Serve(g_s), s	10.1	8.8	2.8	7.1	10.4	8.7	5.3	28.3	2.1	7.0	18.4	2.9
Cycle Q Clear(g_c), s	20.6	8.8	2.8	15.9	10.4	8.7	5.3	28.3	2.1	7.0	18.4	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	318	256	173	318	255	100	2285	1010	129	2326	1028
V/C Ratio(X)	0.89	0.48	0.16	0.41	0.55	0.47	0.79	0.62	0.07	0.81	0.47	0.10
Avail Cap(c_a), veh/h	149	318	256	216	387	311	208	2285	1010	162	2326	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	44.9	42.4	52.0	45.5	44.8	55.9	12.7	8.0	54.8	10.1	7.4
Incr Delay (d2), s/veh	41.2	0.4	0.1	0.6	0.6	0.5	5.0	1.3	0.1	17.6	0.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.1	1.0	2.1	4.9	3.3	2.5	10.5	0.7	3.7	6.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	97.7	45.3	42.5	52.6	46.1	45.3	60.9	14.0	8.2	72.4	10.8	7.6
LnGrp LOS	F	D	D	D	D	D	E	B	A	E	B	A
Approach Vol, veh/h	324			367			1567			1302		
Approach Delay, s/veh	66.3			47.1			16.1			15.5		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	82.7		24.6	10.8	84.7		24.6				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	11.0	48.5		18.0	14.0	45.5		25.0				
Max Q Clear Time (g_c+I1), s	9.0	30.3		22.6	7.3	20.4		17.9				
Green Ext Time (p_c), s	0.0	11.2		0.0	0.0	10.4		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	23.6											
HCM 7th LOS	C											

HCM 7th TWSC
2: 208TH STREET SW & 68TH AVENUE W

CPE & CPM

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	237	309	237	102	4	226
Future Vol, veh/h	237	309	237	102	4	226
Conflicting Peds, #/hr	11	0	0	11	11	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	1	1
Mvmt Flow	258	336	258	111	4	246
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	379	0	-	0	1018	324
Stage 1	-	-	-	-	324	-
Stage 2	-	-	-	-	694	-
Critical Hdwy	4.145	-	-	-	6.615	6.215
Critical Hdwy Stg 1	-	-	-	-	5.415	-
Critical Hdwy Stg 2	-	-	-	-	5.815	-
Follow-up Hdwy	2.2285	-	-	-	3.5095	3.3095
Pot Cap-1 Maneuver	1171	-	-	-	249	719
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	460	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1159	-	-	-	190	711
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	455	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	4.35	0		13.36		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1159	-	-	-	-	679
HCM Lane V/C Ratio	0.222	-	-	-	-	0.368
HCM Control Delay (s/veh)	9	0.8	-	-	-	13.4
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	-	1.7

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↘			↕			↕	
Traffic Vol, veh/h	24	282	9	13	293	15	7	3	21	14	3	14
Future Vol, veh/h	24	282	9	13	293	15	7	3	21	14	3	14
Conflicting Peds, #/hr	30	0	16	16	0	30	10	0	3	3	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	4	4	4	3	3	3	7	7	7
Mvmt Flow	25	291	9	13	302	15	7	3	22	14	3	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	316	0	0	701	735	314	711	732	350
Stage 1	-	-	-	-	-	-	361	361	-	367	367	-
Stage 2	-	-	-	-	-	-	340	374	-	345	365	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.13	6.53	6.23	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.17	5.57	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.527	4.027	3.327	3.563	4.063	3.363
Pot Cap-1 Maneuver	1206	-	-	1233	-	-	352	346	724	341	342	682
Stage 1	-	-	-	-	-	-	655	624	-	643	614	-
Stage 2	-	-	-	-	-	-	672	616	-	660	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1171	-	-	1214	-	-	320	319	711	306	316	657
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	319	-	306	316	-
Stage 1	-	-	-	-	-	-	629	599	-	617	589	-
Stage 2	-	-	-	-	-	-	641	591	-	619	590	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.62			0.32			12.53			14.65		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	510	136	-	-	1214	-	-	405
HCM Lane V/C Ratio	0.063	0.021	-	-	0.011	-	-	0.079
HCM Control Delay (s/veh)	12.5	8.1	0	-	8	-	-	14.7
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3

Timings

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	2	157	1	480	182	99	372
Future Volume (vph)	2	2	157	1	480	182	99	372
Turn Type	NA	NA	Perm	Perm	NA	Perm	D.P+P	NA
Protected Phases	4	8			6		5	2
Permitted Phases			8	6		6	6	
Detector Phase	4	8	8	6	6	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	4.0	4.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	25.0	25.0	25.0	25.5	25.5	25.5	8.0	25.5
Total Split (s)	14.0	34.0	34.0	34.5	34.5	34.5	14.0	34.5
Total Split (%)	14.5%	35.2%	35.2%	35.8%	35.8%	35.8%	14.5%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.5	4.5	4.0	4.5
Lead/Lag				Lag	Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None	Max

Intersection Summary

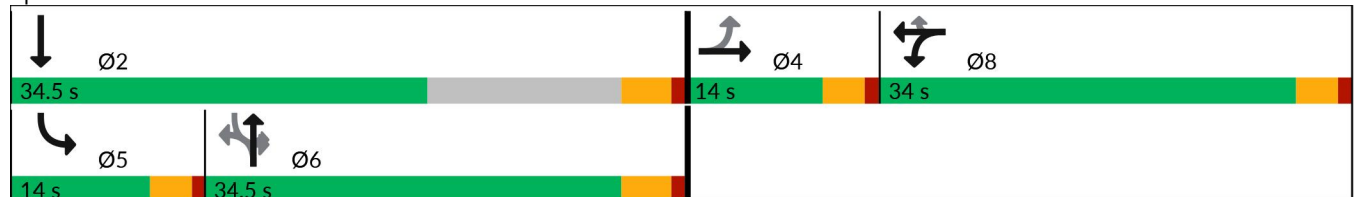
Cycle Length: 96.5

Actuated Cycle Length: 66.3

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: 76TH AVENUE W & 208TH STREET SW



HCM 7th Signalized Intersection Summary

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	1	176	2	157	1	480	182	99	372	1
Future Volume (veh/h)	0	2	1	176	2	157	1	480	182	99	372	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.98		0.94	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	0	2	1	178	2	159	1	485	184	100	376	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	2	2	2	2	2	2	3	3	3
Cap, veh/h	0	25	13	309	3	262	58	904	721	438	1112	3
Arrive On Green	0.00	0.02	0.02	0.18	0.18	0.18	0.48	0.48	0.48	0.05	0.60	0.60
Sat Flow, veh/h	0	1164	582	1762	20	1493	0	1870	1490	1767	1849	5
Grp Volume(v), veh/h	0	0	3	180	0	159	486	0	184	100	0	377
Grp Sat Flow(s),veh/h/ln	0	0	1746	1782	0	1493	1870	0	1490	1767	0	1854
Q Serve(g_s), s	0.0	0.0	0.1	5.7	0.0	6.1	0.0	0.0	4.5	1.7	0.0	6.3
Cycle Q Clear(g_c), s	0.0	0.0	0.1	5.7	0.0	6.1	11.2	0.0	4.5	1.7	0.0	6.3
Prop In Lane	0.00		0.33	0.99		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	38	313	0	262	963	0	721	438	0	1115
V/C Ratio(X)	0.00	0.00	0.08	0.58	0.00	0.61	0.50	0.00	0.26	0.23	0.00	0.34
Avail Cap(c_a), veh/h	0	0	282	862	0	722	963	0	721	630	0	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	29.7	23.5	0.0	23.6	11.2	0.0	9.4	8.2	0.0	6.2
Incr Delay (d2), s/veh	0.0	0.0	0.9	1.7	0.0	2.3	1.9	0.0	0.9	0.3	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	2.4	0.0	2.2	4.5	0.0	1.4	0.6	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	30.6	25.1	0.0	25.9	13.1	0.0	10.3	8.5	0.0	7.0
LnGrp LOS			C	C		C	B		B	A		A
Approach Vol, veh/h	3			339			670			477		
Approach Delay, s/veh	30.6			25.5			12.3			7.3		
Approach LOS	C			C			B			A		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	41.8			5.3		7.3	34.5	14.9				
Change Period (Y+Rc), s	4.5			4.0		4.0	4.5	4.0				
Max Green Setting (Gmax), s	30.0			10.0		10.0	30.0	30.0				
Max Q Clear Time (g_c+I1), s	8.3			2.1		3.7	13.2	8.1				
Green Ext Time (p_c), s	2.3			0.0		0.1	3.5	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.7											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 7th TWSC
5: 76TH AVENUE W & 206TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	41	53	555	448	27
Future Vol, veh/h	15	41	53	555	448	27
Conflicting Peds, #/hr	40	0	20	0	0	20
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	16	43	55	578	467	28

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1229	501	515	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	196	570	1051	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	179	559	1031	-	-	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	469	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v17.07		0.76	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1031	-	356	-	-
HCM Lane V/C Ratio	0.054	-	0.164	-	-
HCM Control Delay (s/veh)	8.7	-	17.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

HCM 7th TWSC
6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	33	557	4	0	412
Future Vol, veh/h	29	33	557	4	0	412
Conflicting Peds, #/hr	255	21	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	13	2	2	3	3
Mvmt Flow	32	36	605	4	0	448
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1338	657	0	0	638	0
Stage 1	636	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.53	6.33	-	-	4.13	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.417	-	-	2.227	-
Pot Cap-1 Maneuver	160	446	-	-	941	-
Stage 1	507	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	426	-	-	916	-
Mov Cap-2 Maneuver	118	-	-	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	33.69	0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	191	916	-	
HCM Lane V/C Ratio	-	-	0.352	-	-	
HCM Control Delay (s/veh)	-	-	33.7	0	-	
HCM Lane LOS	-	-	D	A	-	
HCM 95th %tile Q(veh)	-	-	1.5	0	-	

HCM 7th TWSC
7: 76TH AVENUE W & 202ND STREET SW

CPE & CPM

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	2	0	9	5	0	8	7	574	8	9	444	8
Future Vol, veh/h	2	0	9	5	0	8	7	574	8	9	444	8
Conflicting Peds, #/hr	1	0	0	0	0	1	10	0	14	14	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	4	4	4
Mvmt Flow	2	0	9	5	0	8	7	592	8	9	458	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1098	1119	472	1101	1119	611	476	0	0	614	0	0
Stage 1	490	490	-	624	624	-	-	-	-	-	-	-
Stage 2	607	628	-	476	495	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.236	-	-
Pot Cap-1 Maneuver	192	209	596	191	209	498	1061	-	-	956	-	-
Stage 1	563	552	-	476	481	-	-	-	-	-	-	-
Stage 2	487	479	-	573	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	200	591	182	200	490	1050	-	-	943	-	-
Mov Cap-2 Maneuver	183	200	-	182	200	-	-	-	-	-	-	-
Stage 1	552	541	-	465	469	-	-	-	-	-	-	-
Stage 2	473	467	-	559	539	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	13.8		17.7		0.1		0.17	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1050	-	-	420 297	943	-	-
HCM Lane V/C Ratio	0.007	-	-	0.027 0.045	0.01	-	-
HCM Control Delay (s/veh)	8.5	-	-	13.8 17.7	8.9	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0	-	-

Timings

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	122	521	207	516	110	274	186	92	177
Future Volume (vph)	122	521	207	516	110	274	186	92	177
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	8		4		6		2	2	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	3.0	5.0	3.0	5.0	3.0	3.0	3.0	10.0	3.0
Minimum Split (s)	7.7	24.7	7.7	24.7	7.7	24.7	24.7	14.7	24.7
Total Split (s)	23.7	44.7	23.7	44.7	23.7	63.7	63.7	23.7	63.7
Total Split (%)	15.2%	28.7%	15.2%	28.7%	15.2%	40.9%	40.9%	15.2%	40.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	4.7	3.7	4.7	3.7	3.7	3.7	3.7	3.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	Min	None

Intersection Summary

Cycle Length: 155.8

Actuated Cycle Length: 80.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 76TH AVENUE W & 196TH STREET SW

Ø1	Ø2	Ø3	Ø4
23.7 s	63.7 s	23.7 s	44.7 s
Ø5	Ø6	Ø7	Ø8
23.7 s	63.7 s	23.7 s	44.7 s

HCM 7th Signalized Intersection Summary

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	521	50	207	516	72	110	274	186	92	177	100
Future Volume (veh/h)	122	521	50	207	516	72	110	274	186	92	177	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	130	554	53	220	549	77	117	291	198	98	188	106
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	369	879	84	412	979	137	409	425	355	448	346	195
Arrive On Green	0.07	0.27	0.27	0.12	0.32	0.32	0.07	0.23	0.23	0.15	0.31	0.31
Sat Flow, veh/h	1767	3243	309	1767	3095	433	1781	1870	1562	1781	1118	631
Grp Volume(v), veh/h	130	300	307	220	312	314	117	291	198	98	0	294
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1765	1781	1870	1562	1781	0	1749
Q Serve(g_s), s	3.3	10.1	10.1	5.8	9.9	10.0	3.0	9.6	7.5	2.4	0.0	9.4
Cycle Q Clear(g_c), s	3.3	10.1	10.1	5.8	9.9	10.0	3.0	9.6	7.5	2.4	0.0	9.4
Prop In Lane	1.00		0.17	1.00		0.25	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	369	478	485	412	557	558	409	425	355	448	0	540
V/C Ratio(X)	0.35	0.63	0.63	0.53	0.56	0.56	0.29	0.68	0.56	0.22	0.00	0.54
Avail Cap(c_a), veh/h	765	1048	1063	729	1048	1049	819	1667	1393	713	0	1559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.4	21.5	21.6	15.4	19.1	19.1	14.8	23.8	23.0	14.6	0.0	19.3
Incr Delay (d2), s/veh	0.2	1.9	1.9	0.4	1.3	1.3	0.1	2.0	1.4	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.1	4.2	2.1	3.9	3.9	1.1	4.2	2.7	0.9	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.6	23.5	23.5	15.8	20.4	20.4	14.9	25.7	24.4	14.7	0.0	19.6
LnGrp LOS	B	C	C	B	C	C	B	C	C	B		B
Approach Vol, veh/h	737			846			606			392		
Approach Delay, s/veh	21.9			19.2			23.2			18.4		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	19.0	11.6	23.0	8.2	24.5	8.6	26.0				
Change Period (Y+Rc), s	3.7	3.7	3.7	4.7	3.7	3.7	3.7	4.7				
Max Green Setting (Gmax), s	20.0	60.0	20.0	40.0	20.0	60.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s	4.4	11.6	7.8	12.1	5.0	11.4	5.3	12.0				
Green Ext Time (p_c), s	0.1	2.6	0.2	5.5	0.1	1.3	0.1	5.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.8											
HCM 7th LOS	C											

HCM 7th TWSC
9: 208TH STREET SW & EAST MS EXIT

CPE & CPM

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	295	314	0	23	30
Future Vol, veh/h	0	295	314	0	23	30
Conflicting Peds, #/hr	46	0	0	46	1	26
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	4	4	11	11
Mvmt Flow	0	307	327	0	24	31
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	635	353
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	-	-	-	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	-	-	3.599	3.399
Pot Cap-1 Maneuver	0	-	-	0	428	671
Stage 1	0	-	-	0	711	-
Stage 2	0	-	-	0	725	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	428	654
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	725	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		12.54		
HCM LOS				B		
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	532			
HCM Lane V/C Ratio	-	-	0.104			
HCM Control Delay (s/veh)	-	-	12.5			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.3			

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	291	2	5	335	6	1	0	2	0	0	0
Future Vol, veh/h	8	291	2	5	335	6	1	0	2	0	0	0
Conflicting Peds, #/hr	35	0	7	7	0	35	0	0	24	24	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	5	5	5	0	0	0	0	0	0
Mvmt Flow	8	303	2	5	349	6	1	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	390	0	0	312	0	0	687	728	335
Stage 1	-	-	-	-	-	-	328	328	-
Stage 2	-	-	-	-	-	-	359	401	-
Critical Hdwy	4.13	-	-	4.15	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1163	-	-	1231	-	-	416	352	711
Stage 1	-	-	-	-	-	-	735	651	-
Stage 2	-	-	-	-	-	-	711	605	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1163	-	-	1223	-	-	408	0	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	408	0	-
Stage 1	-	-	-	-	-	-	724	0	-
Stage 2	-	-	-	-	-	-	707	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.22	0.11	11.46
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	561	1163	-	-	26	-	-
HCM Lane V/C Ratio	0.006	0.007	-	-	0.004	-	-
HCM Control Delay (s/veh)	11.5	8.1	-	-	8	0	-
HCM Lane LOS	B	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	300	0	0	334	0	0	0	1	3	0	27
Future Vol, veh/h	0	300	0	0	334	0	0	0	1	3	0	27
Conflicting Peds, #/hr	38	0	20	20	0	38	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	5	5	5	0	0	0	3	3	3
Mvmt Flow	0	337	0	0	375	0	0	0	1	3	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	357	0	0	545	732	360	715	732	188
Stage 1	-	-	-	-	-	-	357	357	-	375	375	-
Stage 2	-	-	-	-	-	-	188	375	-	340	357	-
Critical Hdwy	-	-	-	4.175	-	-	7.3	6.5	6.2	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.145	5.545	-
Follow-up Hdwy	-	-	-	2.2475	-	-	3.5	4	3.3	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	0	-	-	1181	-	0	439	351	689	330	346	820
Stage 1	0	-	-	-	-	0	665	632	-	616	614	-
Stage 2	0	-	-	-	-	0	802	620	-	671	625	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1159	-	-	415	344	674	328	339	820
Mov Cap-2 Maneuver	-	-	-	-	-	-	415	344	-	328	339	-
Stage 1	-	-	-	-	-	-	652	620	-	616	614	-
Stage 2	-	-	-	-	-	-	772	620	-	668	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	10.35	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	674	-	-	1159	-	713
HCM Lane V/C Ratio	0.002	-	-	-	-	0.047
HCM Control Delay (s/veh)	10.4	-	-	0	-	10.3
HCM Lane LOS	B	-	-	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	0.1

HCM 7th TWSC
12: 76TH AVENUE W & DRIVEWAY/ES

CPE & CPM

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		W						T			T	
Traffic Vol, veh/h	17	0	47	2	0	4	1	574	15	4	414	1
Future Vol, veh/h	17	0	47	2	0	4	1	574	15	4	414	1
Conflicting Peds, #/hr	2	0	0	0	0	2	7	0	7	7	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	4	4	4
Mvmt Flow	18	0	48	2	0	4	1	592	15	4	427	1

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1038	1059	434	435	0	0	614	0	0
Stage 1	443	443	-	-	-	-	-	-	-
Stage 2	596	616	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.14	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.236	-	-
Pot Cap-1 Maneuver	258	226	626	1125	-	-	956	-	-
Stage 1	652	579	-	-	-	-	-	-	-
Stage 2	554	485	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	253	0	622	1117	-	-	956	-	-
Mov Cap-2 Maneuver	253	0	-	-	-	-	-	-	-
Stage 1	646	0	-	-	-	-	-	-	-
Stage 2	548	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v14.41		0.01	0.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1117	-	-	448	956	-	-
HCM Lane V/C Ratio	0.001	-	-	0.147	0.004	-	-
HCM Control Delay (s/veh)	8.2	-	-	14.4	8.8	-	-
HCM Lane LOS	A	-	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	-	-

HCM 7th TWSC
13: ES & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	W	
Traffic Vol, veh/h	9	0	0	10	52	0
Future Vol, veh/h	9	0	0	10	52	0
Conflicting Peds, #/hr	0	6	22	0	112	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	16	16
Mvmt Flow	10	0	0	11	57	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	133	15
Stage 1	-	-	-	10	-
Stage 2	-	-	-	123	-
Critical Hdwy	-	-	-	6.56	6.36
Critical Hdwy Stg 1	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	5.56	-
Follow-up Hdwy	-	-	-	3.644	3.444
Pot Cap-1 Maneuver	-	0	0	829	1026
Stage 1	-	0	0	978	-
Stage 2	-	0	0	869	-
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	-	-	-	741	1021
Mov Cap-2 Maneuver	-	-	-	741	-
Stage 1	-	-	-	978	-
Stage 2	-	-	-	776	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10.26
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	741	-	-
HCM Lane V/C Ratio	0.076	-	-
HCM Control Delay (s/veh)	10.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Timings

1: SR-99 & 208TH STREET SW

CCPE & CPM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	119	54	92	200	125	75	598	34	104	1464	99
Future Volume (vph)	76	119	54	92	200	125	75	598	34	104	1464	99
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	9.0	9.0	29.5	29.5	29.5	9.0	28.5	28.5	9.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	52.0	52.0	20.0	57.0	57.0
Total Split (%)	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	10.7%	37.1%	37.1%	14.3%	40.7%	40.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.5	5.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	Max	Max

Intersection Summary

Cycle Length: 140

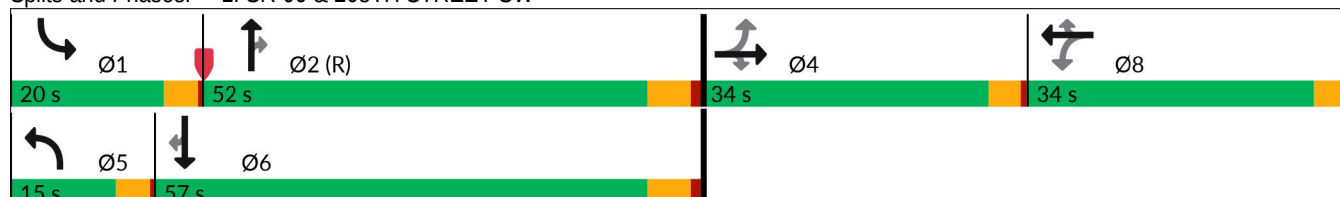
Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-99 & 208TH STREET SW



HCM 7th Signalized Intersection Summary

1: SR-99 & 208TH STREET SW

CCPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	119	54	92	200	125	75	598	34	104	1464	99
Future Volume (veh/h)	76	119	54	92	200	125	75	598	34	104	1464	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1826	1826	1826	1826	1826	1826	1856	1856	1856
Adj Flow Rate, veh/h	83	129	59	100	217	136	82	650	37	113	1591	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	5	5	5	5	5	5	3	3	3
Cap, veh/h	148	371	310	218	374	313	102	2157	960	136	2257	1004
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.62	0.62	0.08	0.64	0.64
Sat Flow, veh/h	991	1811	1515	1157	1826	1527	1739	3469	1544	1767	3526	1569
Grp Volume(v), veh/h	83	129	59	100	217	136	82	650	37	113	1591	108
Grp Sat Flow(s),veh/h/ln	991	1811	1515	1157	1826	1527	1739	1735	1544	1767	1763	1569
Q Serve(g_s), s	11.5	8.5	4.5	11.3	15.0	10.9	6.5	12.2	1.3	8.8	41.4	3.7
Cycle Q Clear(g_c), s	26.6	8.5	4.5	19.9	15.0	10.9	6.5	12.2	1.3	8.8	41.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	371	310	218	374	313	102	2157	960	136	2257	1004
V/C Ratio(X)	0.56	0.35	0.19	0.46	0.58	0.43	0.81	0.30	0.04	0.83	0.70	0.11
Avail Cap(c_a), veh/h	157	388	325	229	391	327	137	2157	960	202	2257	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.2	47.6	46.0	56.2	50.2	48.6	65.1	12.3	10.3	63.7	16.5	9.7
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.6	1.2	0.4	16.4	0.4	0.1	11.0	1.9	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.9	1.7	3.4	7.0	4.2	3.3	4.6	0.5	4.3	16.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.2	47.9	46.2	56.7	51.4	48.9	81.5	12.7	10.3	74.7	18.4	9.9
LnGrp LOS	E	D	D	E	D	D	F	B	B	E	B	A
Approach Vol, veh/h	271			453			769			1812		
Approach Delay, s/veh	52.5			51.8			19.9			21.4		
Approach LOS	D			D			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	92.6		32.7	12.2	95.1		32.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	16.0	46.5		30.0	11.0	51.5		30.0				
Max Q Clear Time (g_c+I1), s	10.8	14.2		28.6	8.5	43.4		21.9				
Green Ext Time (p_c), s	0.1	5.7		0.1	0.0	6.5		0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	27.8											
HCM 7th LOS	C											

HCM 7th TWSC
2: 208TH STREET SW & 68TH AVENUE W

CCPE & CPM

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	135	251	236	133	6	169
Future Vol, veh/h	135	251	236	133	6	169
Conflicting Peds, #/hr	9	0	0	9	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	5	4	4	3	3
Mvmt Flow	169	314	295	166	8	211
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	470	0	-	0	883	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	495	-
Critical Hdwy	4.175	-	-	-	6.645	6.245
Critical Hdwy Stg 1	-	-	-	-	5.445	-
Critical Hdwy Stg 2	-	-	-	-	5.845	-
Follow-up Hdwy	2.2475	-	-	-	3.5285	3.3285
Pot Cap-1 Maneuver	1071	-	-	-	299	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1062	-	-	-	247	652
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	571	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	3.61	0		14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1062	-	-	-	617	
HCM Lane V/C Ratio	0.159	-	-	-	0.354	
HCM Control Delay (s/veh)	9	0.7	-	-	14	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.6	-	-	-	1.6	

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	34	265	5	10	230	39	8	1	24	2	0	8
Future Vol, veh/h	34	265	5	10	230	39	8	1	24	2	0	8
Conflicting Peds, #/hr	15	0	7	7	0	15	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	7	7	7	5	5	5	9	9	9	20	20	20
Mvmt Flow	44	344	6	13	299	51	10	1	31	3	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	364	0	0	358	0	0	782	833	355	799	811	354
Stage 1	-	-	-	-	-	-	443	443	-	365	365	-
Stage 2	-	-	-	-	-	-	340	390	-	434	446	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.19	6.59	6.29	7.3	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.3	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.3	5.7	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.581	4.081	3.381	3.68	4.18	3.48
Pot Cap-1 Maneuver	1167	-	-	1185	-	-	303	297	673	283	294	651
Stage 1	-	-	-	-	-	-	581	564	-	619	593	-
Stage 2	-	-	-	-	-	-	661	595	-	567	545	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1150	-	-	1177	-	-	275	274	668	249	271	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	275	274	-	249	271	-
Stage 1	-	-	-	-	-	-	549	534	-	603	578	-
Stage 2	-	-	-	-	-	-	633	580	-	513	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.92	0.29	13.22	12.65
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	481	201	-	-	1177	-	-	484
HCM Lane V/C Ratio	0.089	0.038	-	-	0.011	-	-	0.027
HCM Control Delay (s/veh)	13.2	8.3	0	-	8.1	-	-	12.6
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

Timings

4: 76TH AVENUE W & 208TH STREET SW

CCPE & CPM



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	0	171	2	228	166	140	401
Future Volume (vph)	2	0	171	2	228	166	140	401
Turn Type	NA	NA	Perm	Perm	NA	Perm	D.P+P	NA
Protected Phases	4	8			6		5	2
Permitted Phases			8	6		6	6	
Detector Phase	4	8	8	6	6	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	25.0	25.0	25.0	25.5	25.5	25.5	8.0	25.5
Total Split (s)	14.0	34.0	34.0	34.5	34.5	34.5	14.0	34.5
Total Split (%)	14.5%	35.2%	35.2%	35.8%	35.8%	35.8%	14.5%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.5	4.5	4.0	4.5
Lead/Lag				Lag	Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None	Max

Intersection Summary

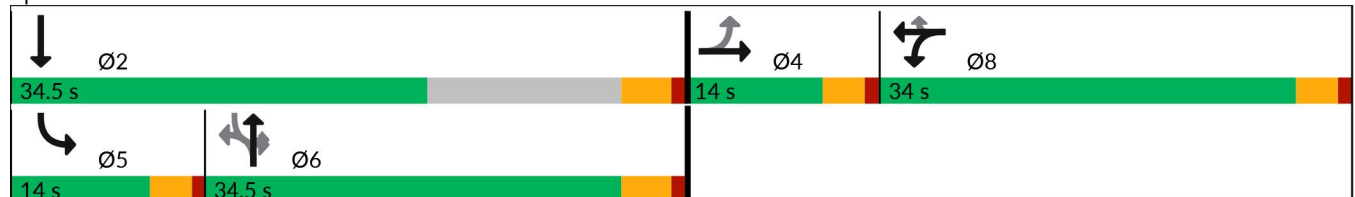
Cycle Length: 96.5

Actuated Cycle Length: 69.5

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: 76TH AVENUE W & 208TH STREET SW



HCM 7th Signalized Intersection Summary 4: 76TH AVENUE W & 208TH STREET SW

CCPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	2	162	0	171	2	228	166	140	401	0
Future Volume (veh/h)	0	2	2	162	0	171	2	228	166	140	401	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.96	0.99		0.95	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1811	1811	1811	1826	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	0	2	2	193	0	204	2	271	198	167	477	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	6	6	6	5	5	5	4	4	4
Cap, veh/h	0	21	21	348	0	298	55	816	662	562	1079	0
Arrive On Green	0.00	0.03	0.03	0.20	0.00	0.20	0.45	0.45	0.45	0.08	0.59	0.00
Sat Flow, veh/h	0	831	830	1725	0	1478	2	1822	1477	1753	1841	0
Grp Volume(v), veh/h	0	0	4	193	0	204	273	0	198	167	477	0
Grp Sat Flow(s),veh/h/ln	0	0	1661	1725	0	1478	1824	0	1477	1753	1841	0
Q Serve(g_s), s	0.0	0.0	0.2	6.7	0.0	8.6	0.0	0.0	5.7	3.3	9.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	6.7	0.0	8.6	6.5	0.0	5.7	3.3	9.7	0.0
Prop In Lane	0.00		0.50	1.00		1.00	0.01		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	42	348	0	298	871	0	662	562	1079	0
V/C Ratio(X)	0.00	0.00	0.09	0.56	0.00	0.69	0.31	0.00	0.30	0.30	0.44	0.00
Avail Cap(c_a), veh/h	0	0	248	773	0	662	871	0	662	686	1079	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	31.9	24.0	0.0	24.8	12.0	0.0	11.8	8.7	7.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	1.4	0.0	2.8	0.9	0.0	1.2	0.3	1.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	2.7	0.0	3.1	2.6	0.0	1.9	1.1	3.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	32.8	25.4	0.0	27.6	12.9	0.0	12.9	9.0	9.0	0.0
LnGrp LOS			C	C		C	B		B	A	A	
Approach Vol, veh/h	4		397				471				644	
Approach Delay, s/veh	32.8		26.5				12.9				9.0	
Approach LOS	C		C				B				A	
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	43.8		5.7		9.3	34.5	17.5					
Change Period (Y+Rc), s	4.5		4.0		4.0	4.5	4.0					
Max Green Setting (Gmax), s	30.0		10.0		10.0	30.0	30.0					
Max Q Clear Time (g_c+I1), s	11.7		2.2		5.3	8.5	10.6					
Green Ext Time (p_c), s	2.9		0.0		0.2	2.3	1.8					
Intersection Summary												
HCM 7th Control Delay, s/veh	14.9											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 7th TWSC
5: 76TH AVENUE W & 206TH STREET SW

CCPE & CPM

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	40	21	386	504	16
Future Vol, veh/h	19	40	21	386	504	16
Conflicting Peds, #/hr	34	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	7	7	5	5
Mvmt Flow	20	42	22	402	525	17

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1031	551	560
Stage 1	551	-	-
Stage 2	480	-	-
Critical Hdwy	6.4	6.2	4.17
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.263
Pot Cap-1 Maneuver	260	538	987
Stage 1	581	-	-
Stage 2	627	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	246	528	970
Mov Cap-2 Maneuver	246	-	-
Stage 1	558	-	-
Stage 2	616	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v16.09		0.45	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	970	-	386	-	-
HCM Lane V/C Ratio	0.023	-	0.159	-	-
HCM Control Delay (s/veh)	8.8	-	16.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Timings

6: 76TH AVENUE W & 204TH STREET SW

CCPE & CPM



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	W	T	T	T
Traffic Volume (vph)	33	270	4	506
Future Volume (vph)	33	270	4	506
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	10.0	10.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

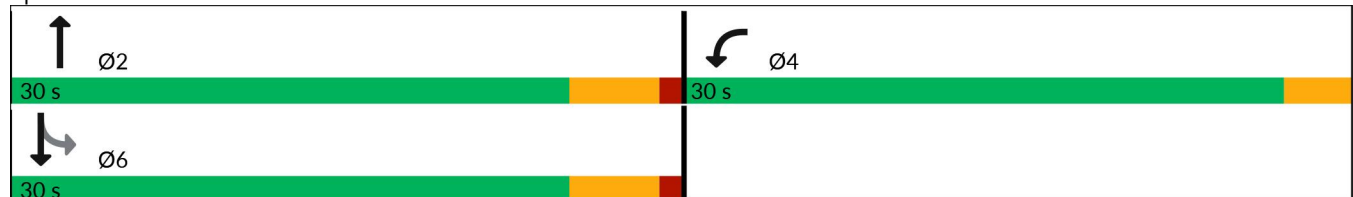
Cycle Length: 60

Actuated Cycle Length: 52.3

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary 6: 76TH AVENUE W & 204TH STREET SW

CCPE & CPM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	33	35	270	14	4	506
Future Volume (veh/h)	33	35	270	14	4	506
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.72		0.95	0.98	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1693	1693	1811	1811	1826	1826
Adj Flow Rate, veh/h	37	39	300	16	4	562
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	14	14	6	6	5	5
Cap, veh/h	187	197	890	47	582	957
Arrive On Green	0.31	0.31	0.52	0.52	0.52	0.52
Sat Flow, veh/h	605	638	1699	91	1021	1826
Grp Volume(v), veh/h	77	0	0	316	4	562
Grp Sat Flow(s),veh/h/ln	1259	0	0	1789	1021	1826
Q Serve(g_s), s	2.2	0.0	0.0	4.9	0.1	10.1
Cycle Q Clear(g_c), s	2.2	0.0	0.0	4.9	5.0	10.1
Prop In Lane	0.48	0.51		0.05	1.00	
Lane Grp Cap(c), veh/h	388	0	0	938	582	957
V/C Ratio(X)	0.20	0.00	0.00	0.34	0.01	0.59
Avail Cap(c_a), veh/h	712	0	0	938	582	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	6.6	8.0	7.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.0	0.0	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.6	0.0	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.4	0.0	0.0	7.5	8.0	10.4
LnGrp LOS	B			A	A	B
Approach Vol, veh/h	77		316			566
Approach Delay, s/veh	12.4		7.5			10.4
Approach LOS	B		A			B
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		17.7		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		27.0		25.0	
Max Q Clear Time (g_c+I1), s	6.9		4.2		12.1	
Green Ext Time (p_c), s	1.8		0.2		3.1	
Intersection Summary						
HCM 7th Control Delay, s/veh			9.6			
HCM 7th LOS			A			

HCM 7th TWSC
7: 76TH AVENUE W & 202ND STREET SW

CCPE & CPM

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	3	0	7	7	0	5	5	303	4	6	516	1
Future Vol, veh/h	3	0	7	7	0	5	5	303	4	6	516	1
Conflicting Peds, #/hr	0	0	0	0	0	0	16	0	8	8	0	16
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	4	4	4
Mvmt Flow	3	0	8	8	0	6	6	337	4	7	573	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	951	963	590	945	962	347	590	0	0	349	0	0
Stage 1	603	603	-	358	358	-	-	-	-	-	-	-
Stage 2	348	360	-	587	604	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.236	-	-
Pot Cap-1 Maneuver	242	257	511	244	258	701	961	-	-	1199	-	-
Stage 1	489	491	-	664	631	-	-	-	-	-	-	-
Stage 2	672	630	-	499	491	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	233	248	504	235	249	695	946	-	-	1190	-	-
Mov Cap-2 Maneuver	233	248	-	235	249	-	-	-	-	-	-	-
Stage 1	479	481	-	654	622	-	-	-	-	-	-	-
Stage 2	662	621	-	489	481	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.94		16.55	0.14	0.09
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	946	-	-	373 325	1190	-	-
HCM Lane V/C Ratio	0.006	-	-	0.03 0.041	0.006	-	-
HCM Control Delay (s/veh)	8.8	-	-	14.9 16.6	8	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0	-	-

Timings

8: 76TH AVENUE W & 196TH STREET SW

CCPE & CPM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	62	468	148	494	56	108	146	79	216
Future Volume (vph)	62	468	148	494	56	108	146	79	216
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	8		4		6		2	2	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	3.0	5.0	3.0	5.0	3.0	3.0	3.0	10.0	3.0
Minimum Split (s)	7.7	24.7	7.7	24.7	7.7	24.7	24.7	14.7	24.7
Total Split (s)	23.7	44.7	23.7	44.7	23.7	63.7	63.7	23.7	63.7
Total Split (%)	15.2%	28.7%	15.2%	28.7%	15.2%	40.9%	40.9%	15.2%	40.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	4.7	3.7	4.7	3.7	3.7	3.7	3.7	3.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	Min	None

Intersection Summary

Cycle Length: 155.8

Actuated Cycle Length: 72.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 76TH AVENUE W & 196TH STREET SW

Ø1	Ø2	Ø3	Ø4
23.7 s	63.7 s	23.7 s	44.7 s
Ø5	Ø6	Ø7	Ø8
23.7 s	63.7 s	23.7 s	44.7 s

HCM 7th Signalized Intersection Summary 8: 76TH AVENUE W & 196TH STREET SW

CCPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	468	77	148	494	41	56	108	146	79	216	137
Future Volume (veh/h)	62	468	77	148	494	41	56	108	146	79	216	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1826	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	63	478	79	151	504	42	57	110	149	81	220	140
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	4	4	4	4	4	4	5	5	5	4	4	4
Cap, veh/h	373	830	136	406	1072	89	316	285	240	571	322	205
Arrive On Green	0.04	0.28	0.28	0.09	0.33	0.33	0.03	0.16	0.16	0.19	0.31	0.31
Sat Flow, veh/h	1753	3003	494	1753	3267	271	1739	1826	1541	1753	1050	668
Grp Volume(v), veh/h	63	277	280	151	269	277	57	110	149	81	0	360
Grp Sat Flow(s),veh/h/ln	1753	1749	1748	1753	1749	1790	1739	1826	1541	1753	0	1719
Q Serve(g_s), s	1.3	7.4	7.4	3.2	6.6	6.6	1.2	2.9	4.9	1.7	0.0	9.9
Cycle Q Clear(g_c), s	1.3	7.4	7.4	3.2	6.6	6.6	1.2	2.9	4.9	1.7	0.0	9.9
Prop In Lane	1.00		0.28	1.00		0.15	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	373	483	483	406	574	587	316	285	240	571	0	527
V/C Ratio(X)	0.17	0.57	0.58	0.37	0.47	0.47	0.18	0.39	0.62	0.14	0.00	0.68
Avail Cap(c_a), veh/h	957	1297	1296	899	1297	1327	901	2031	1715	896	0	1912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	16.8	16.8	12.5	14.4	14.4	13.1	20.4	21.3	12.4	0.0	16.4
Incr Delay (d2), s/veh	0.1	1.5	1.6	0.2	0.9	0.8	0.1	0.9	2.6	0.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	2.8	1.1	2.3	2.4	0.4	1.2	1.7	0.6	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.8	18.3	18.4	12.7	15.2	15.2	13.2	21.3	23.9	12.4	0.0	17.0
LnGrp LOS	B	B	B	B	B	B	B	C	C	B		B
Approach Vol, veh/h	620			697			316			441		
Approach Delay, s/veh	17.7			14.7			21.0			16.1		
Approach LOS	B			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	12.1	8.5	19.6	5.6	20.2	5.7	22.4				
Change Period (Y+Rc), s	3.7	3.7	3.7	4.7	3.7	3.7	3.7	4.7				
Max Green Setting (Gmax), s	20.0	60.0	20.0	40.0	20.0	60.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s	3.7	6.9	5.2	9.4	3.2	11.9	3.3	8.6				
Green Ext Time (p_c), s	0.1	1.2	0.2	5.1	0.0	1.6	0.1	5.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	16.9											
HCM 7th LOS	B											

HCM 7th TWSC
9: 208TH STREET SW & EAST MS EXIT

CCPE & CPM

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	277	250	0	27	34
Future Vol, veh/h	0	277	250	0	27	34
Conflicting Peds, #/hr	16	0	0	16	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	5	5	6	6	12	12
Mvmt Flow	0	364	329	0	36	45
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	693	332
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	-	-	-	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	-	-	3.608	3.408
Pot Cap-1 Maneuver	0	-	-	0	394	687
Stage 1	0	-	-	0	707	-
Stage 2	0	-	-	0	681	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	394	685
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	681	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		13.25		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	517			
HCM Lane V/C Ratio	-	-	0.155			
HCM Control Delay (s/veh)	-	-	13.2			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.5			

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	278	1	3	220	40	3	0	6	0	0	0
Future Vol, veh/h	76	278	1	3	220	40	3	0	6	0	0	0
Conflicting Peds, #/hr	10	0	4	4	0	10	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	4	4	4	5	5	5	0	0	0	0	0	0
Mvmt Flow	104	381	1	4	301	55	4	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	366	0	0	386	0	0	904	968	388
Stage 1	-	-	-	-	-	-	594	594	-
Stage 2	-	-	-	-	-	-	311	374	-
Critical Hdwy	4.14	-	-	4.15	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.236	-	-	2.245	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1181	-	-	1156	-	-	310	256	665
Stage 1	-	-	-	-	-	-	556	496	-
Stage 2	-	-	-	-	-	-	748	621	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1181	-	-	1152	-	-	280	0	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	0	-
Stage 1	-	-	-	-	-	-	505	0	-
Stage 2	-	-	-	-	-	-	744	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	1.79	0.09	13.14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	455	1181	-	-	20	-	-
HCM Lane V/C Ratio	0.027	0.088	-	-	0.004	-	-
HCM Control Delay (s/veh)	13.1	8.3	-	-	8.1	0	-
HCM Lane LOS	B	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	319	1	0	226	0	1	0	0	27	0	87
Future Vol, veh/h	0	319	1	0	226	0	1	0	0	27	0	87
Conflicting Peds, #/hr	8	0	3	3	0	8	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	7	7	7	0	0	0	1	1	1
Mvmt Flow	0	462	1	0	328	0	1	0	0	39	0	126

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	467	0	0	633	794	467	791	794	167
Stage 1	-	-	-	-	-	-	466	466	-	328	328	-
Stage 2	-	-	-	-	-	-	167	328	-	463	467	-
Critical Hdwy	-	-	-	4.205	-	-	7.3	6.5	6.2	7.315	6.515	6.915
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.515	5.515	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.115	5.515	-
Follow-up Hdwy	-	-	-	2.2665	-	-	3.5	4	3.3	3.5095	4.0095	3.3095
Pot Cap-1 Maneuver	0	-	-	1063	-	0	382	323	600	295	321	852
Stage 1	0	-	-	-	-	0	581	566	-	662	649	-
Stage 2	0	-	-	-	-	0	825	651	-	580	563	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1060	-	-	323	322	598	295	320	849
Mov Cap-2 Maneuver	-	-	-	-	-	-	323	322	-	295	320	-
Stage 1	-	-	-	-	-	-	579	564	-	662	649	-
Stage 2	-	-	-	-	-	-	700	651	-	580	562	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	16.19	13.51
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	323	-	-	1060	-	587
HCM Lane V/C Ratio	0.004	-	-	-	-	0.281
HCM Control Delay (s/veh)	16.2	-	-	0	-	13.5
HCM Lane LOS	C	-	-	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	1.1

HCM 7th TWSC
12: 76TH AVENUE W & DRIVEWAY/ES

CCPE & CPM

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		W						T			T	
Traffic Vol, veh/h	15	0	47	0	0	0	1	345	59	30	459	0
Future Vol, veh/h	15	0	47	0	0	0	1	345	59	30	459	0
Conflicting Peds, #/hr	4	0	0	0	0	4	4	0	6	6	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	6	6	6
Mvmt Flow	16	0	49	0	0	0	1	359	61	31	478	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	910	974	482		482	0	0	427	0
Stage 1	545	545	-		-	-	-	-	-
Stage 2	365	429	-		-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2		4.17	-	-	4.16	-
Critical Hdwy Stg 1	5.4	5.5	-		-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-		-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3		2.263	-	-	2.254	-
Pot Cap-1 Maneuver	307	254	588		1055	-	-	1111	0
Stage 1	585	522	-		-	-	-	-	0
Stage 2	706	588	-		-	-	-	-	0
Platoon blocked, %						-	-	-	
Mov Cap-1 Maneuver	296	0	586		1051	-	-	1111	-
Mov Cap-2 Maneuver	296	0	-		-	-	-	-	-
Stage 1	582	0	-		-	-	-	-	-
Stage 2	684	0	-		-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v13.79		0.02	0.51
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	1051	-	-	474	1111	-
HCM Lane V/C Ratio	0.001	-	-	0.136	0.028	-
HCM Control Delay (s/veh)	8.4	-	-	13.8	8.3	-
HCM Lane LOS	A	-	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	-

HCM 7th TWSC
13: ES & 204TH STREET SW

CCPE & CPM

Intersection						
Int Delay, s/veh	6.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	W	
Traffic Vol, veh/h	18	0	0	11	58	2
Future Vol, veh/h	18	0	0	11	58	2
Conflicting Peds, #/hr	0	143	143	0	5	12
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	16	16
Mvmt Flow	23	0	0	14	73	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	41	35
Stage 1	-	-	-	23	-
Stage 2	-	-	-	19	-
Critical Hdwy	-	-	-	6.56	6.36
Critical Hdwy Stg 1	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	5.56	-
Follow-up Hdwy	-	-	-	3.644	3.444
Pot Cap-1 Maneuver	-	0	0	936	1000
Stage 1	-	0	0	965	-
Stage 2	-	0	0	969	-
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	-	-	-	931	988
Mov Cap-2 Maneuver	-	-	-	931	-
Stage 1	-	-	-	965	-
Stage 2	-	-	-	964	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	933	-	-
HCM Lane V/C Ratio	0.08	-	-
HCM Control Delay (s/veh)	9.2	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Timings

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	151	41	71	176	120	79	1412	74	105	1093	103
Future Volume (vph)	132	151	41	71	176	120	79	1412	74	105	1093	103
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	9.0	9.0	29.5	29.5	29.5	9.0	28.5	28.5	9.0	28.5	28.5
Total Split (s)	22.0	22.0	22.0	29.0	29.0	29.0	18.0	54.0	54.0	15.0	51.0	51.0
Total Split (%)	18.3%	18.3%	18.3%	24.2%	24.2%	24.2%	15.0%	45.0%	45.0%	12.5%	42.5%	42.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.5	5.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	Max	Max

Intersection Summary

Cycle Length: 120

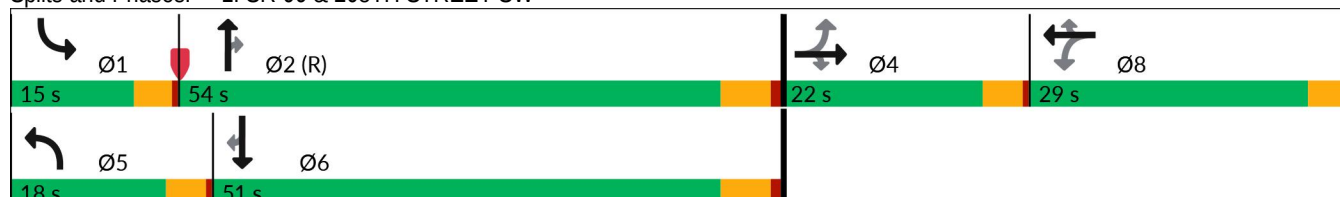
Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-99 & 208TH STREET SW



HCM 7th Signalized Intersection Summary

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	151	41	71	176	120	79	1412	74	105	1093	103
Future Volume (veh/h)	132	151	41	71	176	120	79	1412	74	105	1093	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.95	0.98		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	138	157	43	74	183	125	82	1471	77	109	1139	107
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	3	3	3
Cap, veh/h	149	325	262	174	325	261	104	2263	1000	133	2305	1019
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.64	0.64	0.08	0.65	0.65
Sat Flow, veh/h	1044	1856	1494	1147	1856	1492	1781	3554	1570	1767	3526	1558
Grp Volume(v), veh/h	138	157	43	74	183	125	82	1471	77	109	1139	107
Grp Sat Flow(s),veh/h/ln	1044	1856	1494	1147	1856	1492	1781	1777	1570	1767	1763	1558
Q Serve(g_s), s	10.2	9.1	2.9	7.5	10.8	9.1	5.5	30.8	2.2	7.3	19.8	3.1
Cycle Q Clear(g_c), s	21.0	9.1	2.9	16.6	10.8	9.1	5.5	30.8	2.2	7.3	19.8	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	325	262	174	325	261	104	2263	1000	133	2305	1019
V/C Ratio(X)	0.93	0.48	0.16	0.43	0.56	0.48	0.79	0.65	0.08	0.82	0.49	0.11
Avail Cap(c_a), veh/h	149	325	262	211	387	311	208	2263	1000	162	2305	1019
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	44.6	42.0	52.1	45.3	44.5	55.8	13.5	8.3	54.6	10.6	7.7
Incr Delay (d2), s/veh	52.0	0.4	0.1	0.6	0.6	0.5	4.9	1.5	0.2	19.4	0.8	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	4.3	1.1	2.2	5.0	3.4	2.6	11.5	0.7	3.9	7.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	108.7	45.0	42.1	52.7	45.9	45.1	60.7	15.0	8.5	74.0	11.4	7.9
LnGrp LOS	F	D	D	D	D	D	E	B	A	E	B	A
Approach Vol, veh/h	338			382			1630			1355		
Approach Delay, s/veh	70.7			46.9			17.0			16.1		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.1	81.9		25.0	11.0	84.0		25.0				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	11.0	48.5		18.0	14.0	45.5		25.0				
Max Q Clear Time (g_c+I1), s	9.3	32.8		23.0	7.5	21.8		18.6				
Green Ext Time (p_c), s	0.0	10.5		0.0	0.0	10.6		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	24.7											
HCM 7th LOS	C											

HCM 7th TWSC
2: 208TH STREET SW & 68TH AVENUE W

CPE & CPM

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	247	322	247	106	4	235
Future Vol, veh/h	247	322	247	106	4	235
Conflicting Peds, #/hr	11	0	0	11	11	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	1	1
Mvmt Flow	268	350	268	115	4	255
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	395	0	-	0	1060	337
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	723	-
Critical Hdwy	4.145	-	-	-	6.615	6.215
Critical Hdwy Stg 1	-	-	-	-	5.415	-
Critical Hdwy Stg 2	-	-	-	-	5.815	-
Follow-up Hdwy	2.2285	-	-	-	3.5095	3.3095
Pot Cap-1 Maneuver	1156	-	-	-	235	707
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	445	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1144	-	-	-	176	699
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	440	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	4.43	0		13.81		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1144	-	-	-	-	666
HCM Lane V/C Ratio	0.235	-	-	-	-	0.39
HCM Control Delay (s/veh)	9.1	0.8	-	-	-	13.8
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	-	1.8

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↘			↕			↕	
Traffic Vol, veh/h	25	293	9	14	305	16	7	3	22	15	3	15
Future Vol, veh/h	25	293	9	14	305	16	7	3	22	15	3	15
Conflicting Peds, #/hr	30	0	16	16	0	30	10	0	3	3	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	4	4	4	3	3	3	7	7	7
Mvmt Flow	26	302	9	14	314	16	7	3	23	15	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	361	0	0	327	0	0	729	764	326	740	760	363
Stage 1	-	-	-	-	-	-	374	374	-	382	382	-
Stage 2	-	-	-	-	-	-	355	390	-	358	379	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.13	6.53	6.23	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.17	5.57	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.527	4.027	3.327	3.563	4.063	3.363
Pot Cap-1 Maneuver	1192	-	-	1221	-	-	337	333	713	327	330	671
Stage 1	-	-	-	-	-	-	645	616	-	631	604	-
Stage 2	-	-	-	-	-	-	660	606	-	650	606	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1158	-	-	1202	-	-	305	306	700	291	303	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	305	306	-	291	303	-
Stage 1	-	-	-	-	-	-	618	590	-	605	580	-
Stage 2	-	-	-	-	-	-	627	582	-	607	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.63	0.34	12.73	15.11
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	499	137	-	-	1202	-	-	390
HCM Lane V/C Ratio	0.066	0.022	-	-	0.012	-	-	0.087
HCM Control Delay (s/veh)	12.7	8.2	0	-	8	-	-	15.1
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3

Timings

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	2	163	1	499	189	103	387
Future Volume (vph)	2	2	163	1	499	189	103	387
Turn Type	NA	NA	Perm	Perm	NA	Perm	D.P+P	NA
Protected Phases	4	8			6		5	2
Permitted Phases			8	6		6	6	
Detector Phase	4	8	8	6	6	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	4.0	4.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	25.0	25.0	25.0	25.5	25.5	25.5	8.0	25.5
Total Split (s)	14.0	34.0	34.0	34.5	34.5	34.5	14.0	34.5
Total Split (%)	14.5%	35.2%	35.2%	35.8%	35.8%	35.8%	14.5%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.5	4.5	4.0	4.5
Lead/Lag				Lag	Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None	Max

Intersection Summary

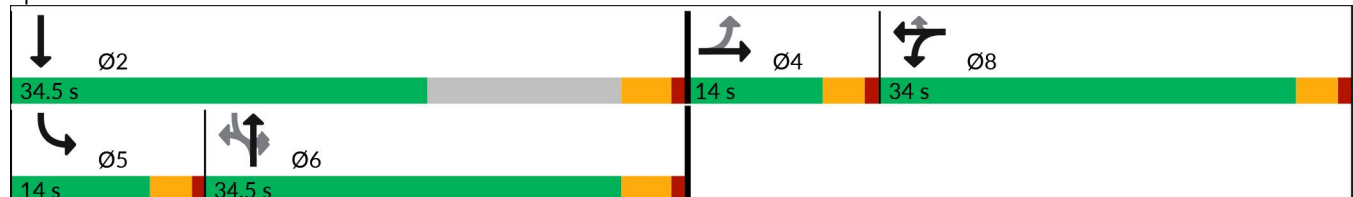
Cycle Length: 96.5

Actuated Cycle Length: 66.5

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: 76TH AVENUE W & 208TH STREET SW



HCM 7th Signalized Intersection Summary 4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	1	183	2	163	1	499	189	103	387	1
Future Volume (veh/h)	0	2	1	183	2	163	1	499	189	103	387	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.98		0.94	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	0	2	1	185	2	165	1	504	191	104	391	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	2	2	2	2	2	2	3	3	3
Cap, veh/h	0	25	13	316	3	268	58	899	716	423	1107	3
Arrive On Green	0.00	0.02	0.02	0.18	0.18	0.18	0.48	0.48	0.48	0.05	0.60	0.60
Sat Flow, veh/h	0	1164	582	1763	19	1494	0	1870	1490	1767	1850	5
Grp Volume(v), veh/h	0	0	3	187	0	165	505	0	191	104	0	392
Grp Sat Flow(s),veh/h/ln	0	0	1746	1782	0	1494	1870	0	1490	1767	0	1854
Q Serve(g_s), s	0.0	0.0	0.1	6.0	0.0	6.4	0.0	0.0	4.8	1.8	0.0	6.7
Cycle Q Clear(g_c), s	0.0	0.0	0.1	6.0	0.0	6.4	12.0	0.0	4.8	1.8	0.0	6.7
Prop In Lane	0.00		0.33	0.99		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	38	319	0	268	957	0	716	423	0	1110
V/C Ratio(X)	0.00	0.00	0.08	0.59	0.00	0.62	0.53	0.00	0.27	0.25	0.00	0.35
Avail Cap(c_a), veh/h	0	0	280	857	0	718	957	0	716	612	0	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	29.9	23.5	0.0	23.6	11.5	0.0	9.6	8.5	0.0	6.4
Incr Delay (d2), s/veh	0.0	0.0	0.9	1.7	0.0	2.3	2.1	0.0	0.9	0.3	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	2.5	0.0	2.3	4.8	0.0	1.5	0.6	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	30.8	25.2	0.0	25.9	13.6	0.0	10.5	8.8	0.0	7.3
LnGrp LOS			C	C		C	B		B	A		A
Approach Vol, veh/h	3		352				696				496	
Approach Delay, s/veh	30.8		25.5				12.8				7.6	
Approach LOS	C		C				B				A	
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	41.8		5.4		7.3	34.5	15.2					
Change Period (Y+Rc), s	4.5		4.0		4.0	4.5	4.0					
Max Green Setting (Gmax), s	30.0		10.0		10.0	30.0	30.0					
Max Q Clear Time (g_c+I1), s	8.7		2.1		3.8	14.0	8.4					
Green Ext Time (p_c), s	2.4		0.0		0.1	3.6	1.6					
Intersection Summary												
HCM 7th Control Delay, s/veh	14.0											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 7th TWSC
5: 76TH AVENUE W & 206TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑	W	
Traffic Vol, veh/h	16	43	55	578	466	28
Future Vol, veh/h	16	43	55	578	466	28
Conflicting Peds, #/hr	40	0	20	0	0	20
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	17	45	57	602	485	29

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1277	520	535	0	-	0
Stage 1	520	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	184	556	1033	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	546	1014	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v18.02		0.76	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1014	-	338	-	-
HCM Lane V/C Ratio	0.057	-	0.182	-	-
HCM Control Delay (s/veh)	8.8	-	18	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM



Lane Group	WBL	NBT	SBT
Lane Configurations	W	T	T
Traffic Volume (vph)	30	580	429
Future Volume (vph)	30	580	429
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	10.0	10.0
Total Split (s)	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Max	Max

Intersection Summary

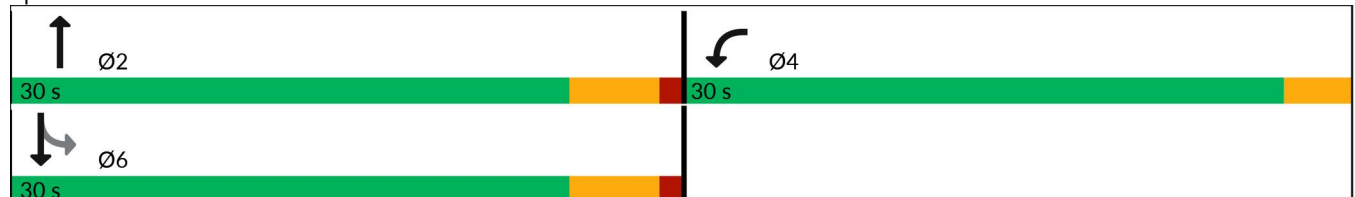
Cycle Length: 60

Actuated Cycle Length: 51.2

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary 6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	34	580	4	0	429
Future Volume (veh/h)	30	34	580	4	0	429
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.63		0.95	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1707	1707	1870	1870	1856	1856
Adj Flow Rate, veh/h	33	37	630	4	0	466
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	13	2	2	3	3
Cap, veh/h	184	206	923	6	143	923
Arrive On Green	0.34	0.34	0.50	0.50	0.00	0.50
Sat Flow, veh/h	536	601	1856	12	787	1856
Grp Volume(v), veh/h	71	0	0	634	0	466
Grp Sat Flow(s),veh/h/ln	1153	0	0	1868	787	1856
Q Serve(g_s), s	2.2	0.0	0.0	13.0	0.0	8.5
Cycle Q Clear(g_c), s	2.2	0.0	0.0	13.0	0.0	8.5
Prop In Lane	0.46	0.52		0.01	1.00	
Lane Grp Cap(c), veh/h	396	0	0	929	143	923
V/C Ratio(X)	0.18	0.00	0.00	0.68	0.00	0.50
Avail Cap(c_a), veh/h	620	0	0	929	143	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	9.6	0.0	8.5
Incr Delay (d2), s/veh	0.2	0.0	0.0	4.0	0.0	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	5.0	0.0	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.8	0.0	0.0	13.7	0.0	10.4
LnGrp LOS	B			B		B
Approach Vol, veh/h	71		634			466
Approach Delay, s/veh	11.8		13.7			10.4
Approach LOS	B		B			B
Timer - Assigned Phs		2	4		6	
Phs Duration (G+Y+Rc), s		30.0	20.3		30.0	
Change Period (Y+Rc), s		5.0	3.0		5.0	
Max Green Setting (Gmax), s		25.0	27.0		25.0	
Max Q Clear Time (g_c+l1), s		15.0	4.2		10.5	
Green Ext Time (p_c), s		3.1	0.2		2.5	
Intersection Summary						
HCM 7th Control Delay, s/veh			12.3			
HCM 7th LOS			B			

HCM 7th TWSC
7: 76TH AVENUE W & 202ND STREET SW

CPE & CPM

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	2	0	9	5	0	8	7	597	8	9	462	8
Future Vol, veh/h	2	0	9	5	0	8	7	597	8	9	462	8
Conflicting Peds, #/hr	1	0	0	0	0	1	10	0	14	14	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	4	4	4
Mvmt Flow	2	0	9	5	0	8	7	615	8	9	476	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1140	1161	490	1143	1161	635	495	0	0	638	0	0
Stage 1	509	509	-	648	648	-	-	-	-	-	-	-
Stage 2	631	652	-	495	513	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.236	-	-
Pot Cap-1 Maneuver	180	197	582	179	197	482	1044	-	-	936	-	-
Stage 1	550	541	-	462	469	-	-	-	-	-	-	-
Stage 2	472	467	-	560	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	171	188	576	170	188	475	1034	-	-	924	-	-
Mov Cap-2 Maneuver	171	188	-	170	188	-	-	-	-	-	-	-
Stage 1	540	531	-	451	458	-	-	-	-	-	-	-
Stage 2	459	456	-	546	529	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.19		18.44	0.1	0.17
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1034	-	-	403	281	924	-
HCM Lane V/C Ratio	0.007	-	-	0.028	0.048	0.01	-
HCM Control Delay (s/veh)	8.5	-	-	14.2	18.4	8.9	-
HCM Lane LOS	A	-	-	B	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Timings

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	127	542	215	537	114	285	194	96	184
Future Volume (vph)	127	542	215	537	114	285	194	96	184
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	8		4		6		2	2	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	3.0	5.0	3.0	5.0	3.0	3.0	3.0	10.0	3.0
Minimum Split (s)	7.7	24.7	7.7	24.7	7.7	24.7	24.7	14.7	24.7
Total Split (s)	23.7	44.7	23.7	44.7	23.7	63.7	63.7	23.7	63.7
Total Split (%)	15.2%	28.7%	15.2%	28.7%	15.2%	40.9%	40.9%	15.2%	40.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	4.7	3.7	4.7	3.7	3.7	3.7	3.7	3.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	Min	None

Intersection Summary

Cycle Length: 155.8

Actuated Cycle Length: 83.8

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 76TH AVENUE W & 196TH STREET SW

Ø1	Ø2	Ø3	Ø4
23.7 s	63.7 s	23.7 s	44.7 s
Ø5	Ø6	Ø7	Ø8
23.7 s	63.7 s	23.7 s	44.7 s

HCM 7th Signalized Intersection Summary 8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	542	52	215	537	75	114	285	194	96	184	104
Future Volume (veh/h)	127	542	52	215	537	75	114	285	194	96	184	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	577	55	229	571	80	121	303	206	102	196	111
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	365	891	85	410	993	139	397	432	361	435	343	194
Arrive On Green	0.07	0.27	0.27	0.12	0.32	0.32	0.07	0.23	0.23	0.14	0.31	0.31
Sat Flow, veh/h	1767	3244	308	1767	3096	432	1781	1870	1562	1781	1116	632
Grp Volume(v), veh/h	135	313	319	229	324	327	121	303	206	102	0	307
Grp Sat Flow(s),veh/h/ln	1767	1763	1790	1767	1763	1765	1781	1870	1562	1781	0	1748
Q Serve(g_s), s	3.5	10.8	10.9	6.2	10.6	10.7	3.1	10.3	8.1	2.6	0.0	10.2
Cycle Q Clear(g_c), s	3.5	10.8	10.9	6.2	10.6	10.7	3.1	10.3	8.1	2.6	0.0	10.2
Prop In Lane	1.00		0.17	1.00		0.24	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	365	484	492	410	565	566	397	432	361	435	0	537
V/C Ratio(X)	0.37	0.65	0.65	0.56	0.57	0.58	0.30	0.70	0.57	0.23	0.00	0.57
Avail Cap(c_a), veh/h	744	1020	1035	707	1020	1021	790	1623	1356	693	0	1517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.7	22.1	22.1	15.7	19.5	19.6	15.3	24.4	23.5	15.1	0.0	20.1
Incr Delay (d2), s/veh	0.2	2.1	2.1	0.4	1.3	1.3	0.2	2.1	1.4	0.1	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.4	4.5	2.3	4.2	4.2	1.2	4.5	2.9	1.0	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.9	24.2	24.2	16.2	20.9	20.9	15.5	26.5	25.0	15.2	0.0	20.5
LnGrp LOS	B	C	C	B	C	C	B	C	C	B		C
Approach Vol, veh/h	767			880			630			409		
Approach Delay, s/veh	22.6			19.6			23.9			19.2		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	19.7	12.1	23.7	8.5	24.9	8.9	26.9				
Change Period (Y+Rc), s	3.7	3.7	3.7	4.7	3.7	3.7	3.7	4.7				
Max Green Setting (Gmax), s	20.0	60.0	20.0	40.0	20.0	60.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s	4.6	12.3	8.2	12.9	5.1	12.2	5.5	12.7				
Green Ext Time (p_c), s	0.1	2.7	0.2	5.8	0.1	1.3	0.1	6.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.4											
HCM 7th LOS	C											

HCM 7th TWSC
9: 208TH STREET SW & EAST MS EXIT

CPE & CPM

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	307	327	0	24	31
Future Vol, veh/h	0	307	327	0	24	31
Conflicting Peds, #/hr	46	0	0	46	1	26
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	4	4	11	11
Mvmt Flow	0	320	341	0	25	32
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	661	367
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	321	-
Critical Hdwy	-	-	-	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	-	-	3.599	3.399
Pot Cap-1 Maneuver	0	-	-	0	413	659
Stage 1	0	-	-	0	701	-
Stage 2	0	-	-	0	716	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	413	643
Mov Cap-2 Maneuver	-	-	-	-	413	-
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	716	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		12.82		
HCM LOS				B		
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	517			
HCM Lane V/C Ratio	-	-	0.111			
HCM Control Delay (s/veh)	-	-	12.8			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.4			

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	303	2	5	349	6	1	0	2	0	0	0
Future Vol, veh/h	8	303	2	5	349	6	1	0	2	0	0	0
Conflicting Peds, #/hr	35	0	7	7	0	35	0	0	24	24	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	5	5	5	0	0	0	0	0	0
Mvmt Flow	8	316	2	5	364	6	1	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	405	0	0	325	0	0	714	756	348
Stage 1	-	-	-	-	-	-	340	340	-
Stage 2	-	-	-	-	-	-	374	415	-
Critical Hdwy	4.13	-	-	4.15	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1149	-	-	1218	-	-	401	340	700
Stage 1	-	-	-	-	-	-	725	643	-
Stage 2	-	-	-	-	-	-	700	596	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1149	-	-	1210	-	-	393	0	679
Mov Cap-2 Maneuver	-	-	-	-	-	-	393	0	-
Stage 1	-	-	-	-	-	-	715	0	-
Stage 2	-	-	-	-	-	-	696	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.21	0.11	11.62
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	547	1149	-	-	25	-	-
HCM Lane V/C Ratio	0.006	0.007	-	-	0.004	-	-
HCM Control Delay (s/veh)	11.6	8.2	-	-	8	0	-
HCM Lane LOS	B	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	312	0	0	348	0	0	0	1	3	0	28
Future Vol, veh/h	0	312	0	0	348	0	0	0	1	3	0	28
Conflicting Peds, #/hr	38	0	20	20	0	38	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	5	5	5	0	0	0	3	3	3
Mvmt Flow	0	351	0	0	391	0	0	0	1	3	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	371	0	0	566	762	374	745	762	196
Stage 1	-	-	-	-	-	-	371	371	-	391	391	-
Stage 2	-	-	-	-	-	-	196	391	-	354	371	-
Critical Hdwy	-	-	-	4.175	-	-	7.3	6.5	6.2	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.145	5.545	-
Follow-up Hdwy	-	-	-	2.2475	-	-	3.5	4	3.3	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	0	-	-	1167	-	0	424	337	677	315	333	811
Stage 1	0	-	-	-	-	0	654	623	-	603	604	-
Stage 2	0	-	-	-	-	0	794	611	-	660	617	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1145	-	-	400	331	662	313	326	811
Mov Cap-2 Maneuver	-	-	-	-	-	-	400	331	-	313	326	-
Stage 1	-	-	-	-	-	-	641	611	-	603	604	-
Stage 2	-	-	-	-	-	-	763	611	-	657	605	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	10.45	10.39
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	662	-	-	1145	-	703
HCM Lane V/C Ratio	0.002	-	-	-	-	0.05
HCM Control Delay (s/veh)	10.4	-	-	0	-	10.4
HCM Lane LOS	B	-	-	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	0.2

HCM 7th TWSC
12: 76TH AVENUE W & DRIVEWAY/ES

CPE & CPM

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		W						T			T	
Traffic Vol, veh/h	18	0	49	2	0	4	1	597	16	4	431	1
Future Vol, veh/h	18	0	49	2	0	4	1	597	16	4	431	1
Conflicting Peds, #/hr	2	0	0	0	0	2	7	0	7	7	0	7
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	4	4	4
Mvmt Flow	19	0	51	2	0	4	1	615	16	4	444	1

Major/Minor	Minor2			Major1		Major2			
Conflicting Flow All	1080	1101	452	452	0	0	639	0	0
Stage 1	460	460	-	-	-	-	-	-	-
Stage 2	620	641	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.14	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.236	-	-
Pot Cap-1 Maneuver	244	214	612	1108	-	-	935	-	-
Stage 1	640	569	-	-	-	-	-	-	-
Stage 2	541	473	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	239	0	608	1101	-	-	935	-	-
Mov Cap-2 Maneuver	239	0	-	-	-	-	-	-	-
Stage 1	635	0	-	-	-	-	-	-	-
Stage 2	535	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v14.98		0.01	0.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	430	935	-	-
HCM Lane V/C Ratio	0.001	-	-	0.161	0.004	-	-
HCM Control Delay (s/veh)	8.3	-	-	15	8.9	-	-
HCM Lane LOS	A	-	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	-	-

HCM 7th TWSC
13: ES & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	7.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↔	
Traffic Vol, veh/h	9	0	0	10	54	0
Future Vol, veh/h	9	0	0	10	54	0
Conflicting Peds, #/hr	0	6	22	0	112	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	16	16
Mvmt Flow	10	0	0	11	59	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	133	15
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	-	-	-	-	6.56	6.36
Critical Hdwy Stg 1	-	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	-	5.56	-
Follow-up Hdwy	-	-	-	-	3.644	3.444
Pot Cap-1 Maneuver	-	0	0	-	829	1026
Stage 1	-	0	0	-	978	-
Stage 2	-	0	0	-	869	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	741	1021
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	776	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		10.28	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	741	-	-			
HCM Lane V/C Ratio	0.079	-	-			
HCM Control Delay (s/veh)	10.3	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.3	-	-			

Timings

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	143	69	92	168	125	112	598	34	104	1464	128
Future Volume (vph)	91	143	69	92	168	125	112	598	34	104	1464	128
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	9.0	9.0	29.5	29.5	29.5	9.0	28.5	28.5	9.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	52.0	52.0	20.0	57.0	57.0
Total Split (%)	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	10.7%	37.1%	37.1%	14.3%	40.7%	40.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.5	5.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	Max	Max

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-99 & 208TH STREET SW

	Ø1		Ø2 (R)		Ø4		Ø8
20 s		52 s		34 s		34 s	
	Ø5		Ø6				
15 s		57 s					

HCM 7th Signalized Intersection Summary

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	143	69	92	168	125	112	598	34	104	1464	128
Future Volume (veh/h)	91	143	69	92	168	125	112	598	34	104	1464	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1826	1826	1826	1826	1826	1826	1856	1856	1856
Adj Flow Rate, veh/h	99	155	75	100	183	136	122	650	37	113	1591	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	5	5	5	5	5	5	3	3	3
Cap, veh/h	165	363	303	191	366	306	137	2173	967	136	2202	980
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.08	0.63	0.63	0.08	0.62	0.62
Sat Flow, veh/h	1021	1811	1514	1114	1826	1527	1739	3469	1544	1767	3526	1569
Grp Volume(v), veh/h	99	155	75	100	183	136	122	650	37	113	1591	139
Grp Sat Flow(s),veh/h/ln	1021	1811	1514	1114	1826	1527	1739	1735	1544	1767	1763	1569
Q Serve(g_s), s	13.4	10.5	5.8	12.1	12.5	10.9	9.7	12.1	1.3	8.8	43.2	5.1
Cycle Q Clear(g_c), s	25.8	10.5	5.8	22.5	12.5	10.9	9.7	12.1	1.3	8.8	43.2	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	363	303	191	366	306	137	2173	967	136	2202	980
V/C Ratio(X)	0.60	0.43	0.25	0.52	0.50	0.44	0.89	0.30	0.04	0.83	0.72	0.14
Avail Cap(c_a), veh/h	179	388	324	207	391	327	137	2173	967	202	2202	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	48.9	47.1	58.8	49.7	49.1	63.9	12.0	10.0	63.7	18.0	10.8
Incr Delay (d2), s/veh	2.8	0.3	0.2	0.8	0.4	0.4	45.4	0.4	0.1	11.0	2.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.8	0.0	3.5	5.8	4.2	6.0	4.6	0.4	4.3	16.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.0	49.2	47.2	59.6	50.1	49.5	109.3	12.4	10.1	74.7	20.1	11.1
LnGrp LOS	E	D	D	E	D	D	F	B	B	E	C	B
Approach Vol, veh/h	329			419			809			1843		
Approach Delay, s/veh	53.2			52.2			26.9			22.7		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	93.2		32.1	15.0	92.9		32.1				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	16.0	46.5		30.0	11.0	51.5		30.0				
Max Q Clear Time (g_c+I1), s	10.8	14.1		27.8	11.7	45.2		24.5				
Green Ext Time (p_c), s	0.1	5.7		0.2	0.0	5.2		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	30.3											
HCM 7th LOS	C											

HCM 7th TWSC
2: 208TH STREET SW & 68TH AVENUE W

CPE & CPM

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	135	305	270	133	6	169
Future Vol, veh/h	135	305	270	133	6	169
Conflicting Peds, #/hr	9	0	0	9	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	5	5	4	4	3	3
Mvmt Flow	169	381	338	166	8	211
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	513	0	-	0	959	430
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	529	-
Critical Hdwy	4.175	-	-	-	6.645	6.245
Critical Hdwy Stg 1	-	-	-	-	5.445	-
Critical Hdwy Stg 2	-	-	-	-	5.845	-
Follow-up Hdwy	2.2475	-	-	-	3.5285	3.3285
Pot Cap-1 Maneuver	1033	-	-	-	268	622
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1024	-	-	-	220	617
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	540	-
Stage 2	-	-	-	-	549	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	3.38	0		14.89		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1024	-	-	-	581	
HCM Lane V/C Ratio	0.165	-	-	-	0.377	
HCM Control Delay (s/veh)	9.2	0.8	-	-	14.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.6	-	-	-	1.7	

Intersection

Int Delay, s/veh 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	165	274	5	10	248	55	8	1	24	47	0	140
Future Vol, veh/h	165	274	5	10	248	55	8	1	24	47	0	140
Conflicting Peds, #/hr	15	0	7	7	0	15	15	0	1	1	0	15
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	5	5	5	9	9	9	20	20	20
Mvmt Flow	179	298	5	11	270	60	9	1	26	51	0	152

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	344	0	0	310	0	0	973	1032	309	994	1005	329
Stage 1	-	-	-	-	-	-	666	666	-	336	336	-
Stage 2	-	-	-	-	-	-	306	366	-	658	669	-
Critical Hdwy	4.17	-	-	4.15	-	-	7.19	6.59	6.29	7.3	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.3	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.3	5.7	-
Follow-up Hdwy	2.263	-	-	2.245	-	-	3.581	4.081	3.381	3.68	4.18	3.48
Pot Cap-1 Maneuver	1187	-	-	1233	-	-	225	226	715	208	225	672
Stage 1	-	-	-	-	-	-	437	447	-	642	611	-
Stage 2	-	-	-	-	-	-	689	610	-	425	429	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1170	-	-	1225	-	-	142	186	710	164	185	653
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	186	-	164	185	-
Stage 1	-	-	-	-	-	-	368	376	-	627	597	-
Stage 2	-	-	-	-	-	-	516	596	-	345	361	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	3.21			0.25			16.64			25.52		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1170	-	-	1225	-	-	374
HCM Lane V/C Ratio	0.104	0.153	-	-	0.009	-	-	0.544
HCM Control Delay (s/veh)	16.6	8.6	-	-	8	-	-	25.5
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0	-	-	3.1

Timings

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	0	206	2	360	229	211	512
Future Volume (vph)	2	0	206	2	360	229	211	512
Turn Type	NA	NA	Perm	Perm	NA	Perm	D.P+P	NA
Protected Phases	4	8			6		5	2
Permitted Phases			8	6		6	6	
Detector Phase	4	8	8	6	6	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	25.0	25.0	25.0	25.5	25.5	25.5	8.0	25.5
Total Split (s)	14.0	34.0	34.0	34.5	34.5	34.5	14.0	34.5
Total Split (%)	14.5%	35.2%	35.2%	35.8%	35.8%	35.8%	14.5%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.5	4.5	4.0	4.5
Lead/Lag				Lag	Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None	Max

Intersection Summary

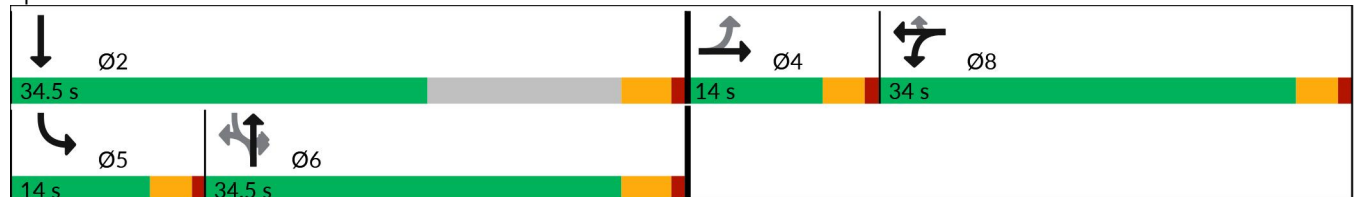
Cycle Length: 96.5

Actuated Cycle Length: 73.3

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: 76TH AVENUE W & 208TH STREET SW



HCM 7th Signalized Intersection Summary

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	2	192	0	206	2	360	229	211	512	0
Future Volume (veh/h)	0	2	2	192	0	206	2	360	229	211	512	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.97	0.99		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1811	1811	1811	1826	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	0	2	2	229	0	245	2	429	273	251	610	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	6	6	6	5	5	5	4	4	4
Cap, veh/h	0	21	21	383	0	329	51	757	612	462	1067	0
Arrive On Green	0.00	0.03	0.03	0.22	0.00	0.22	0.42	0.42	0.42	0.11	0.58	0.00
Sat Flow, veh/h	0	827	827	1725	0	1483	1	1823	1474	1753	1841	0
Grp Volume(v), veh/h	0	0	4	229	0	245	431	0	273	251	610	0
Grp Sat Flow(s),veh/h/ln	0	0	1654	1725	0	1483	1824	0	1474	1753	1841	0
Q Serve(g_s), s	0.0	0.0	0.2	8.6	0.0	11.1	0.0	0.0	9.6	5.7	15.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	8.6	0.0	11.1	13.0	0.0	9.6	5.7	15.0	0.0
Prop In Lane	0.00		0.50	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	42	383	0	329	808	0	612	462	1067	0
V/C Ratio(X)	0.00	0.00	0.10	0.60	0.00	0.74	0.53	0.00	0.45	0.54	0.57	0.00
Avail Cap(c_a), veh/h	0	0	229	717	0	616	808	0	612	514	1067	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	34.4	25.2	0.0	26.2	16.1	0.0	15.1	11.3	9.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	1.5	0.0	3.3	2.5	0.0	2.3	1.0	2.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	3.5	0.0	4.0	5.6	0.0	3.4	2.1	5.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	35.4	26.7	0.0	29.5	18.7	0.0	17.5	12.3	11.8	0.0
LnGrp LOS			D	C			C	B			B	B
Approach Vol, veh/h	4		474				704				861	
Approach Delay, s/veh	35.4		28.2				18.2				11.9	
Approach LOS	D		C				B				B	
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	46.4		5.8		11.9	34.5	20.0					
Change Period (Y+Rc), s	4.5		4.0		4.0	4.5	4.0					
Max Green Setting (Gmax), s	30.0		10.0		10.0	30.0	30.0					
Max Q Clear Time (g_c+I1), s	17.0		2.2		7.7	15.0	13.1					
Green Ext Time (p_c), s	3.4		0.0		0.2	3.4	2.1					
Intersection Summary												
HCM 7th Control Delay, s/veh	17.9											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 7th TWSC
5: 76TH AVENUE W & 206TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	64	40	534	662	49
Future Vol, veh/h	55	64	40	534	662	49
Conflicting Peds, #/hr	34	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	7	7	5	5
Mvmt Flow	57	67	42	556	690	51

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1407	733	759	0	-	0
Stage 1	733	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.17	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.263	-	-	-
Pot Cap-1 Maneuver	155	424	831	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	417	816	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	502	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.54	0.67	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	816	-	340	-	-
HCM Lane V/C Ratio	0.051	-	0.365	-	-
HCM Control Delay (s/veh)	9.6	-	21.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	-	-

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	286	217	58	427
Future Volume (vph)	286	217	58	427
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	10.0	10.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

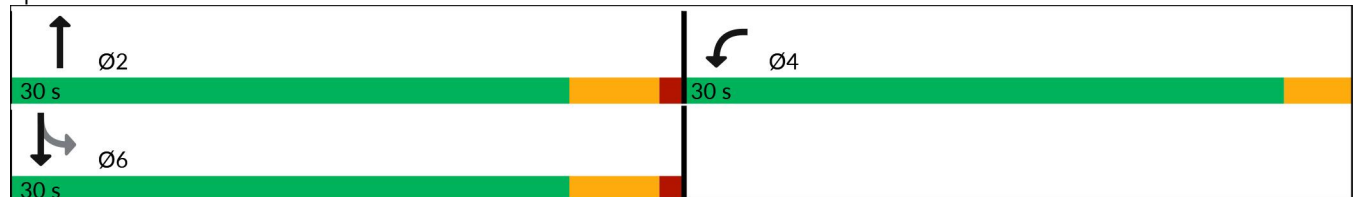
Cycle Length: 60

Actuated Cycle Length: 49.8

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	286	53	217	323	58	427
Future Volume (veh/h)	286	53	217	323	58	427
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.76		0.95	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1693	1693	1811	1811	1826	1826
Adj Flow Rate, veh/h	318	59	241	359	64	474
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	14	14	6	6	5	5
Cap, veh/h	451	84	309	461	278	889
Arrive On Green	0.36	0.36	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1262	234	635	946	792	1826
Grp Volume(v), veh/h	378	0	0	600	64	474
Grp Sat Flow(s),veh/h/ln	1500	0	0	1581	792	1826
Q Serve(g_s), s	11.1	0.0	0.0	16.1	3.7	9.2
Cycle Q Clear(g_c), s	11.1	0.0	0.0	16.1	19.8	9.2
Prop In Lane	0.84	0.16		0.60	1.00	
Lane Grp Cap(c), veh/h	536	0	0	770	278	889
V/C Ratio(X)	0.71	0.00	0.00	0.78	0.23	0.53
Avail Cap(c_a), veh/h	789	0	0	770	278	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	0.0	10.9	19.1	9.1
Incr Delay (d2), s/veh	1.7	0.0	0.0	7.7	1.9	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	5.9	0.8	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.9	0.0	0.0	18.5	21.0	11.4
LnGrp LOS	B			B	C	B
Approach Vol, veh/h	378		600		538	
Approach Delay, s/veh	15.9		18.5		12.5	
Approach LOS	B		B		B	
Timer - Assigned Phs						
	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		21.3		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		27.0		25.0	
Max Q Clear Time (g_c+l1), s	18.1		13.1		21.8	
Green Ext Time (p_c), s	2.4		1.2		1.0	
Intersection Summary						
HCM 7th Control Delay, s/veh			15.8			
HCM 7th LOS			B			

HCM 7th TWSC
7: 76TH AVENUE W & 202ND STREET SW

CPE & CPM

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	3	0	7	7	0	3	5	268	4	6	491	1
Future Vol, veh/h	3	0	7	7	0	3	5	268	4	6	491	1
Conflicting Peds, #/hr	0	0	0	0	0	0	16	0	8	8	0	16
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	4	4	4
Mvmt Flow	3	0	8	8	0	3	6	298	4	7	546	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	884	897	562	878	895	308	563	0	0	310	0	0
Stage 1	575	575	-	319	319	-	-	-	-	-	-	-
Stage 2	309	321	-	559	576	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.236	-	-
Pot Cap-1 Maneuver	268	282	530	271	282	737	984	-	-	1239	-	-
Stage 1	507	506	-	697	656	-	-	-	-	-	-	-
Stage 2	706	655	-	517	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	260	272	522	261	272	731	969	-	-	1230	-	-
Mov Cap-2 Maneuver	260	272	-	261	272	-	-	-	-	-	-	-
Stage 1	496	495	-	687	647	-	-	-	-	-	-	-
Stage 2	697	646	-	507	495	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.24		16.51	0.16	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	969	-	-	401 324	1230	-	-
HCM Lane V/C Ratio	0.006	-	-	0.028 0.034	0.005	-	-
HCM Control Delay (s/veh)	8.7	-	-	14.2 16.5	7.9	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0	-	-

Timings

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	62	468	139	494	60	97	117	79	191
Future Volume (vph)	62	468	139	494	60	97	117	79	191
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	8		4		6		2	2	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	3.0	5.0	3.0	5.0	3.0	3.0	3.0	10.0	3.0
Minimum Split (s)	7.7	24.7	7.7	24.7	7.7	24.7	24.7	14.7	24.7
Total Split (s)	23.7	44.7	23.7	44.7	23.7	63.7	63.7	23.7	63.7
Total Split (%)	15.2%	28.7%	15.2%	28.7%	15.2%	40.9%	40.9%	15.2%	40.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	4.7	3.7	4.7	3.7	3.7	3.7	3.7	3.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	Min	None

Intersection Summary

Cycle Length: 155.8

Actuated Cycle Length: 70.5

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 76TH AVENUE W & 196TH STREET SW

Ø1	Ø2	Ø3	Ø4
23.7 s	63.7 s	23.7 s	44.7 s
Ø5	Ø6	Ø7	Ø8
23.7 s	63.7 s	23.7 s	44.7 s

HCM 7th Signalized Intersection Summary

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	468	86	139	494	41	60	97	117	79	191	137
Future Volume (veh/h)	62	468	86	139	494	41	60	97	117	79	191	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1826	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	63	478	88	142	504	42	61	99	119	81	195	140
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	4	4	4	4	4	4	5	5	5	4	4	4
Cap, veh/h	380	839	154	406	1082	90	324	250	211	574	290	208
Arrive On Green	0.04	0.28	0.28	0.08	0.33	0.33	0.04	0.14	0.14	0.19	0.29	0.29
Sat Flow, veh/h	1753	2948	540	1753	3267	271	1739	1826	1541	1753	996	715
Grp Volume(v), veh/h	63	282	284	142	269	277	61	99	119	81	0	335
Grp Sat Flow(s),veh/h/ln	1753	1749	1739	1753	1749	1790	1739	1826	1541	1753	0	1710
Q Serve(g_s), s	1.2	7.2	7.3	2.9	6.4	6.4	1.3	2.6	3.8	1.7	0.0	9.0
Cycle Q Clear(g_c), s	1.2	7.2	7.3	2.9	6.4	6.4	1.3	2.6	3.8	1.7	0.0	9.0
Prop In Lane	1.00		0.31	1.00		0.15	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	380	497	495	406	579	593	324	250	211	574	0	498
V/C Ratio(X)	0.17	0.57	0.57	0.35	0.46	0.47	0.19	0.40	0.56	0.14	0.00	0.67
Avail Cap(c_a), veh/h	986	1339	1332	930	1339	1371	925	2098	1770	909	0	1965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	15.9	16.0	11.9	13.8	13.8	13.0	20.6	21.1	12.4	0.0	16.3
Incr Delay (d2), s/veh	0.1	1.5	1.5	0.2	0.8	0.8	0.1	1.0	2.3	0.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.6	2.7	1.0	2.2	2.3	0.4	1.1	1.3	0.6	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.3	17.4	17.5	12.1	14.6	14.6	13.1	21.6	23.4	12.5	0.0	16.9
LnGrp LOS	B	B	B	B	B	B	B	C	C	B		B
Approach Vol, veh/h	629			688			279			416		
Approach Delay, s/veh	16.8			14.1			20.5			16.0		
Approach LOS	B			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	10.9	8.1	19.6	5.7	18.9	5.7	22.0				
Change Period (Y+Rc), s	3.7	3.7	3.7	4.7	3.7	3.7	3.7	4.7				
Max Green Setting (Gmax), s	20.0	60.0	20.0	40.0	20.0	60.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s	3.7	5.8	4.9	9.3	3.3	11.0	3.2	8.4				
Green Ext Time (p_c), s	0.1	1.0	0.1	5.3	0.1	1.5	0.1	5.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	16.2											
HCM 7th LOS	B											

HCM 7th TWSC
10: 208TH STREET SW & PARKING ENTRANCE

CPE & CPM

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	461	1	0	372	0	3	0	6	0	0	0
Future Vol, veh/h	0	461	1	0	372	0	3	0	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	501	1	0	404	0	3	0	7	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	404	0	0	502	0	0	906	906	502
Stage 1	-	-	-	-	-	-	502	502	-
Stage 2	-	-	-	-	-	-	404	404	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1154	-	-	1062	-	-	307	276	570
Stage 1	-	-	-	-	-	-	608	542	-
Stage 2	-	-	-	-	-	-	674	599	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1154	-	-	1062	-	-	307	0	570
Mov Cap-2 Maneuver	-	-	-	-	-	-	307	0	-
Stage 1	-	-	-	-	-	-	608	0	-
Stage 2	-	-	-	-	-	-	674	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	13.31
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	443	1154	-	-	1062	-	-
HCM Lane V/C Ratio	0.022	-	-	-	-	-	-
HCM Control Delay (s/veh)	13.3	0	-	-	0	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	453	0	0	378	0	1	0	0	0	0	0
Future Vol, veh/h	0	453	0	0	378	0	1	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	492	0	0	411	0	1	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	492	0	0	698	903	492	903	903	205
Stage 1	-	-	-	-	-	-	492	492	-	411	411	-
Stage 2	-	-	-	-	-	-	205	411	-	492	492	-
Critical Hdwy	-	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	-	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	1069	-	0	341	276	576	245	276	802
Stage 1	0	-	-	-	-	0	557	547	-	590	594	-
Stage 2	0	-	-	-	-	0	778	594	-	557	547	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1069	-	-	341	276	576	245	276	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	276	-	245	276	-
Stage 1	-	-	-	-	-	-	557	547	-	590	594	-
Stage 2	-	-	-	-	-	-	778	594	-	557	547	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	15.6	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	341	-	-	1069	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-
HCM Control Delay (s/veh)	15.6	-	-	0	-	0
HCM Lane LOS	C	-	-	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-

HCM 7th TWSC
13: MIDDLE SCHOOL & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	4.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖	↘	
Traffic Vol, veh/h	18	363	0	11	309	0
Future Vol, veh/h	18	363	0	11	309	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	395	0	12	336	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	414	0	32	20
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	12	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1145	-	982	1058
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1145	-	982	1058
Mov Cap-2 Maneuver	-	-	-	-	982	-
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	1011	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		10.56	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	982	-	-	1145	-	
HCM Lane V/C Ratio	0.342	-	-	-	-	
HCM Control Delay (s/veh)	10.6	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.5	-	-	0	-	

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	W	
Traffic Vol, veh/h	381	0	0	320	20	0
Future Vol, veh/h	381	0	0	320	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	414	0	0	348	22	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	762 414
Stage 1	-	-	-	-	414 -
Stage 2	-	-	-	-	348 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	373 638
Stage 1	-	0	0	-	667 -
Stage 2	-	0	0	-	715 -
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	373 638
Mov Cap-2 Maneuver	-	-	-	-	373 -
Stage 1	-	-	-	-	667 -
Stage 2	-	-	-	-	715 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	15.25
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	373	-	-
HCM Lane V/C Ratio	0.058	-	-
HCM Control Delay (s/veh)	15.3	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Timings

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	168	46	71	172	120	101	1412	74	105	1093	123
Future Volume (vph)	138	168	46	71	172	120	101	1412	74	105	1093	123
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.0	9.0	9.0	29.5	29.5	29.5	9.0	28.5	28.5	9.0	28.5	28.5
Total Split (s)	22.0	22.0	22.0	29.0	29.0	29.0	18.0	54.0	54.0	15.0	51.0	51.0
Total Split (%)	18.3%	18.3%	18.3%	24.2%	24.2%	24.2%	15.0%	45.0%	45.0%	12.5%	42.5%	42.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	4.0	5.5	5.5
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	Max	Max

Intersection Summary

Cycle Length: 120

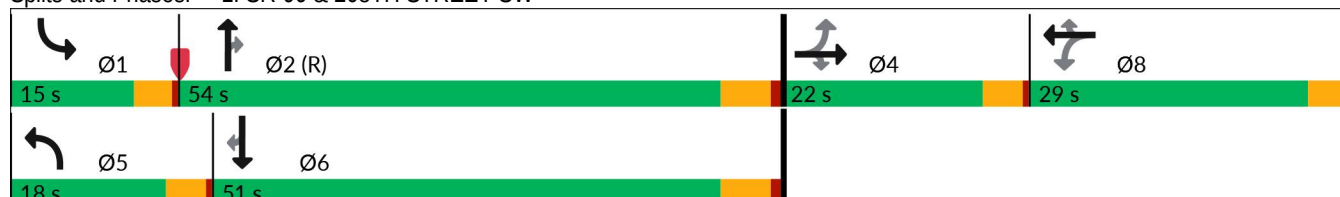
Actuated Cycle Length: 120

Offset: 105 (88%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 1: SR-99 & 208TH STREET SW



HCM 7th Signalized Intersection Summary

1: SR-99 & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	168	46	71	172	120	101	1412	74	105	1093	123
Future Volume (veh/h)	138	168	46	71	172	120	101	1412	74	105	1093	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.95	0.98		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	144	175	48	74	179	125	105	1471	77	109	1139	128
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	3	3	3
Cap, veh/h	159	337	272	169	337	272	130	2239	989	133	2231	986
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.07	0.63	0.63	0.08	0.63	0.63
Sat Flow, veh/h	1048	1856	1496	1125	1856	1494	1781	3554	1570	1767	3526	1558
Grp Volume(v), veh/h	144	175	48	74	179	125	105	1471	77	109	1139	128
Grp Sat Flow(s),veh/h/ln	1048	1856	1496	1125	1856	1494	1781	1777	1570	1767	1763	1558
Q Serve(g_s), s	11.3	10.2	3.3	7.6	10.5	9.0	7.0	31.4	2.3	7.3	21.0	3.9
Cycle Q Clear(g_c), s	21.8	10.2	3.3	17.9	10.5	9.0	7.0	31.4	2.3	7.3	21.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	337	272	169	337	272	130	2239	989	133	2231	986
V/C Ratio(X)	0.91	0.52	0.18	0.44	0.53	0.46	0.81	0.66	0.08	0.82	0.51	0.13
Avail Cap(c_a), veh/h	159	337	272	199	387	311	208	2239	989	162	2231	986
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	44.3	41.5	52.4	44.4	43.8	54.8	14.0	8.6	54.6	12.0	8.8
Incr Delay (d2), s/veh	44.0	0.7	0.1	0.7	0.5	0.5	5.0	1.5	0.2	19.4	0.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	4.8	1.2	2.2	4.9	3.4	3.3	11.7	0.8	3.9	7.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	100.1	45.0	41.6	53.1	44.9	44.3	59.8	15.5	8.8	74.0	12.8	9.1
LnGrp LOS	F	D	D	D	D	D	E	B	A	E	B	A
Approach Vol, veh/h	367			378			1653			1376		
Approach Delay, s/veh	66.2			46.3			18.0			17.3		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.1	81.1		25.8	12.7	81.4		25.8				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	11.0	48.5		18.0	14.0	45.5		25.0				
Max Q Clear Time (g_c+I1), s	9.3	33.4		23.8	9.0	23.0		19.9				
Green Ext Time (p_c), s	0.0	10.2		0.0	0.0	10.4		0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	25.3											
HCM 7th LOS	C											

HCM 7th TWSC
2: 208TH STREET SW & 68TH AVENUE W

CPE & CPM

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		Y	
Traffic Vol, veh/h	247	350	285	106	4	235
Future Vol, veh/h	247	350	285	106	4	235
Conflicting Peds, #/hr	11	0	0	11	11	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	1	1
Mvmt Flow	268	380	310	115	4	255
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	436	0	-	0	1117	378
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	738	-
Critical Hdwy	4.145	-	-	-	6.615	6.215
Critical Hdwy Stg 1	-	-	-	-	5.415	-
Critical Hdwy Stg 2	-	-	-	-	5.815	-
Follow-up Hdwy	2.2285	-	-	-	3.5095	3.3095
Pot Cap-1 Maneuver	1116	-	-	-	216	670
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	437	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1104	-	-	-	160	663
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	432	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	4.4	0		14.66		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1104	-	-	-	630	
HCM Lane V/C Ratio	0.243	-	-	-	0.412	
HCM Control Delay (s/veh)	9.3	0.9	-	-	14.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	1	-	-	-	2	

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	302	9	14	331	28	7	3	22	34	3	100
Future Vol, veh/h	86	302	9	14	331	28	7	3	22	34	3	100
Conflicting Peds, #/hr	30	0	16	16	0	30	10	0	3	3	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	4	4	4	3	3	3	7	7	7
Mvmt Flow	89	311	9	14	341	29	7	3	23	35	3	103

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	400	0	0	337	0	0	891	938	335	908	928	396
Stage 1	-	-	-	-	-	-	509	509	-	415	415	-
Stage 2	-	-	-	-	-	-	382	429	-	493	514	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.13	6.53	6.23	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.17	5.57	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.527	4.027	3.327	3.563	4.063	3.363
Pot Cap-1 Maneuver	1153	-	-	1211	-	-	262	263	705	251	263	643
Stage 1	-	-	-	-	-	-	545	536	-	605	584	-
Stage 2	-	-	-	-	-	-	639	582	-	548	527	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1120	-	-	1193	-	-	191	229	692	211	229	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	191	229	-	211	229	-
Stage 1	-	-	-	-	-	-	494	486	-	581	561	-
Stage 2	-	-	-	-	-	-	518	559	-	484	478	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.84			0.3			15			18.41		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	1120	-	-	1193	-	-	408
HCM Lane V/C Ratio	0.084	0.079	-	-	0.012	-	-	0.346
HCM Control Delay (s/veh)	15	8.5	-	-	8.1	-	-	18.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	1.5

Timings

4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	2	189	1	541	237	160	439
Future Volume (vph)	2	2	189	1	541	237	160	439
Turn Type	NA	NA	Perm	Perm	NA	Perm	D.P+P	NA
Protected Phases	4	8			6		5	2
Permitted Phases			8	6		6	6	
Detector Phase	4	8	8	6	6	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	4.0	4.0	6.0	6.0	6.0	4.0	6.0
Minimum Split (s)	25.0	25.0	25.0	25.5	25.5	25.5	8.0	25.5
Total Split (s)	14.0	34.0	34.0	34.5	34.5	34.5	14.0	34.5
Total Split (%)	14.5%	35.2%	35.2%	35.8%	35.8%	35.8%	14.5%	35.8%
Yellow Time (s)	3.0	3.0	3.0	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.5	4.5	4.0	4.5
Lead/Lag				Lag	Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	Max	Max	Max	None	Max

Intersection Summary

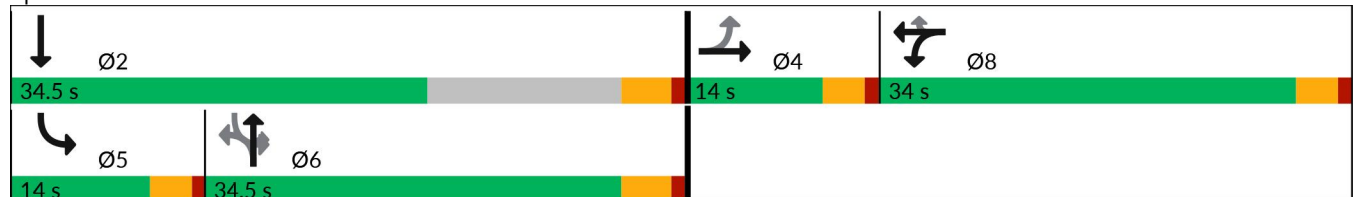
Cycle Length: 96.5

Actuated Cycle Length: 70.2

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: 76TH AVENUE W & 208TH STREET SW



HCM 7th Signalized Intersection Summary 4: 76TH AVENUE W & 208TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	1	211	2	189	1	541	237	160	439	1
Future Volume (veh/h)	0	2	1	211	2	189	1	541	237	160	439	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	0.98		0.94	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	0	2	1	213	2	191	1	546	239	162	443	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	2	2	2	2	2	2	3	3	3
Cap, veh/h	0	25	13	342	3	290	55	855	680	403	1100	2
Arrive On Green	0.00	0.02	0.02	0.19	0.19	0.19	0.46	0.46	0.46	0.08	0.59	0.59
Sat Flow, veh/h	0	1162	581	1766	17	1498	0	1870	1486	1767	1850	4
Grp Volume(v), veh/h	0	0	3	215	0	191	547	0	239	162	0	444
Grp Sat Flow(s),veh/h/ln	0	0	1743	1782	0	1498	1870	0	1486	1767	0	1855
Q Serve(g_s), s	0.0	0.0	0.1	7.3	0.0	7.7	0.0	0.0	6.8	3.1	0.0	8.4
Cycle Q Clear(g_c), s	0.0	0.0	0.1	7.3	0.0	7.7	14.7	0.0	6.8	3.1	0.0	8.4
Prop In Lane	0.00		0.33	0.99		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	38	345	0	290	910	0	680	403	0	1102
V/C Ratio(X)	0.00	0.00	0.08	0.62	0.00	0.66	0.60	0.00	0.35	0.40	0.00	0.40
Avail Cap(c_a), veh/h	0	0	266	815	0	685	910	0	680	538	0	1102
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	31.5	24.3	0.0	24.5	13.7	0.0	11.5	10.0	0.0	7.1
Incr Delay (d2), s/veh	0.0	0.0	0.9	1.8	0.0	2.5	2.9	0.0	1.4	0.6	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	3.1	0.0	2.8	6.2	0.0	2.3	1.1	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	32.3	26.1	0.0	27.0	16.6	0.0	12.9	10.7	0.0	8.2
LnGrp LOS			C	C		C	B		B	B		A
Approach Vol, veh/h	3		406				786				606	
Approach Delay, s/veh	32.3		26.5				15.5				8.9	
Approach LOS	C		C				B				A	
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	43.5		5.4		9.0	34.5	16.7					
Change Period (Y+Rc), s	4.5		4.0		4.0	4.5	4.0					
Max Green Setting (Gmax), s	30.0		10.0		10.0	30.0	30.0					
Max Q Clear Time (g_c+I1), s	10.4		2.1		5.1	16.7	9.7					
Green Ext Time (p_c), s	2.7		0.0		0.2	3.8	1.9					
Intersection Summary												
HCM 7th Control Delay, s/veh	15.8											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 7th TWSC
5: 76TH AVENUE W & 206TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	56	68	633	562	49
Future Vol, veh/h	33	56	68	633	562	49
Conflicting Peds, #/hr	40	0	20	0	0	20
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	34	58	71	659	585	51
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1472	631	656	0	-	0
Stage 1	631	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	140	481	931	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	124	472	913	-	-	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v18.34		0.9		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	913	-	362	-	-	
HCM Lane V/C Ratio	0.078	-	0.256	-	-	
HCM Control Delay (s/veh)	9.3	-	18.3	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.3	-	1	-	-	

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	188	547	24	405
Future Volume (vph)	188	547	24	405
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	24.5	10.0	10.0	10.0
Total Split (s)	30.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

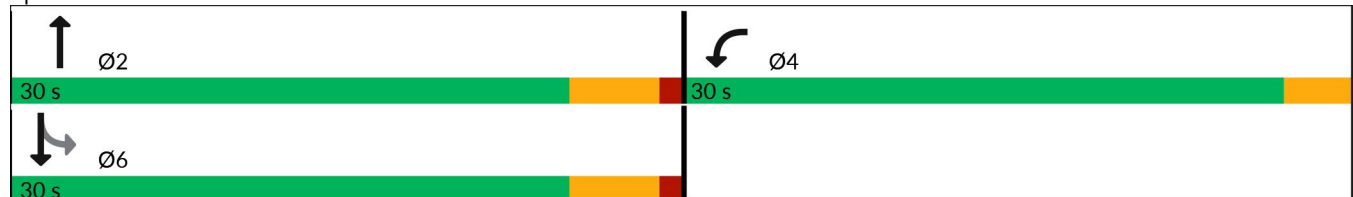
Cycle Length: 60

Actuated Cycle Length: 48.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary 6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	188	37	547	146	24	405
Future Volume (veh/h)	188	37	547	146	24	405
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.64		0.95	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1707	1707	1870	1870	1856	1856
Adj Flow Rate, veh/h	204	40	595	159	26	440
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	13	2	2	3	3
Cap, veh/h	431	84	684	183	218	904
Arrive On Green	0.36	0.36	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1207	237	1405	375	700	1856
Grp Volume(v), veh/h	245	0	0	754	26	440
Grp Sat Flow(s),veh/h/ln	1449	0	0	1780	700	1856
Q Serve(g_s), s	6.7	0.0	0.0	19.3	1.8	8.2
Cycle Q Clear(g_c), s	6.7	0.0	0.0	19.3	21.1	8.2
Prop In Lane	0.83	0.16		0.21	1.00	
Lane Grp Cap(c), veh/h	517	0	0	867	218	904
V/C Ratio(X)	0.47	0.00	0.00	0.87	0.12	0.49
Avail Cap(c_a), veh/h	763	0	0	867	218	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	0.0	0.0	11.7	21.1	8.8
Incr Delay (d2), s/veh	0.7	0.0	0.0	11.5	1.1	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	8.6	0.3	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.4	0.0	0.0	23.2	22.2	10.7
LnGrp LOS	B			C	C	B
Approach Vol, veh/h	245		754			466
Approach Delay, s/veh	13.4		23.2			11.4
Approach LOS	B		C			B
Timer - Assigned Phs						
	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		21.3		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		27.0		25.0	
Max Q Clear Time (g_c+I1), s	21.3		8.7		23.1	
Green Ext Time (p_c), s	1.8		0.8		0.6	
Intersection Summary						
HCM 7th Control Delay, s/veh			17.8			
HCM 7th LOS			B			

HCM 7th TWSC
7: 76TH AVENUE W & 202ND STREET SW

CPE & CPM

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	2	0	9	5	0	8	7	567	8	9	462	8
Future Vol, veh/h	2	0	9	5	0	8	7	567	8	9	462	8
Conflicting Peds, #/hr	1	0	0	0	0	1	10	0	14	14	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	7	7	7	4	4	4
Mvmt Flow	2	0	9	5	0	8	7	585	8	9	476	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1109	1130	490	1112	1130	604	495	0	0	607	0	0
Stage 1	509	509	-	617	617	-	-	-	-	-	-	-
Stage 2	600	621	-	495	513	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.236	-	-
Pot Cap-1 Maneuver	189	205	582	188	205	502	1044	-	-	962	-	-
Stage 1	550	541	-	481	484	-	-	-	-	-	-	-
Stage 2	491	482	-	560	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	180	197	576	179	197	495	1034	-	-	949	-	-
Mov Cap-2 Maneuver	180	197	-	179	197	-	-	-	-	-	-	-
Stage 1	540	531	-	469	473	-	-	-	-	-	-	-
Stage 2	478	471	-	546	529	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14	17.81	0.1	0.17
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1034	-	-	412 294	949	-	-
HCM Lane V/C Ratio	0.007	-	-	0.028 0.046	0.01	-	-
HCM Control Delay (s/veh)	8.5	-	-	14 17.8	8.8	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0	-	-

Timings

8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	127	542	208	537	115	265	183	96	182
Future Volume (vph)	127	542	208	537	115	265	183	96	182
Turn Type	D.P+P	NA	D.P+P	NA	D.P+P	NA	Perm	D.P+P	NA
Protected Phases	7	4	3	8	5	2		1	6
Permitted Phases	8		4		6		2	2	
Detector Phase	7	4	3	8	5	2	2	1	6
Switch Phase									
Minimum Initial (s)	3.0	5.0	3.0	5.0	3.0	3.0	3.0	10.0	3.0
Minimum Split (s)	7.7	24.7	7.7	24.7	7.7	24.7	24.7	14.7	24.7
Total Split (s)	23.7	44.7	23.7	44.7	23.7	63.7	63.7	23.7	63.7
Total Split (%)	15.2%	28.7%	15.2%	28.7%	15.2%	40.9%	40.9%	15.2%	40.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	4.7	3.7	4.7	3.7	3.7	3.7	3.7	3.7
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	Min	None

Intersection Summary

Cycle Length: 155.8

Actuated Cycle Length: 82.8

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 76TH AVENUE W & 196TH STREET SW

Ø1	Ø2	Ø3	Ø4
23.7 s	63.7 s	23.7 s	44.7 s
Ø5	Ø6	Ø7	Ø8
23.7 s	63.7 s	23.7 s	44.7 s

HCM 7th Signalized Intersection Summary 8: 76TH AVENUE W & 196TH STREET SW

CPE & CPM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	542	61	208	537	75	115	265	183	96	182	104
Future Volume (veh/h)	127	542	61	208	537	75	115	265	183	96	182	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	577	65	221	571	80	122	282	195	102	194	111
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	369	894	100	407	1000	140	392	415	347	445	333	191
Arrive On Green	0.07	0.28	0.28	0.12	0.32	0.32	0.07	0.22	0.22	0.15	0.30	0.30
Sat Flow, veh/h	1767	3185	358	1767	3096	432	1781	1870	1562	1781	1112	636
Grp Volume(v), veh/h	135	319	323	221	324	327	122	282	195	102	0	305
Grp Sat Flow(s),veh/h/ln	1767	1763	1780	1767	1763	1766	1781	1870	1562	1781	0	1748
Q Serve(g_s), s	3.4	10.8	10.8	5.8	10.4	10.4	3.1	9.4	7.5	2.6	0.0	10.1
Cycle Q Clear(g_c), s	3.4	10.8	10.8	5.8	10.4	10.4	3.1	9.4	7.5	2.6	0.0	10.1
Prop In Lane	1.00		0.20	1.00		0.24	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	369	495	499	407	569	570	392	415	347	445	0	523
V/C Ratio(X)	0.37	0.64	0.65	0.54	0.57	0.57	0.31	0.68	0.56	0.23	0.00	0.58
Avail Cap(c_a), veh/h	757	1039	1049	720	1039	1040	793	1653	1380	708	0	1545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	21.4	21.5	15.3	19.1	19.1	15.3	24.2	23.5	15.0	0.0	20.2
Incr Delay (d2), s/veh	0.2	2.0	2.0	0.4	1.3	1.3	0.2	2.0	1.4	0.1	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.3	4.4	2.1	4.0	4.1	1.2	4.1	2.7	1.0	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.5	23.4	23.5	15.7	20.4	20.4	15.5	26.1	24.9	15.1	0.0	20.6
LnGrp LOS	B	C	C	B	C	C	B	C	C	B		C
Approach Vol, veh/h	777			872			599			407		
Approach Delay, s/veh	21.9			19.2			23.6			19.2		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	18.8	11.7	23.7	8.4	24.0	8.8	26.6				
Change Period (Y+Rc), s	3.7	3.7	3.7	4.7	3.7	3.7	3.7	4.7				
Max Green Setting (Gmax), s	20.0	60.0	20.0	40.0	20.0	60.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s	4.6	11.4	7.8	12.8	5.1	12.1	5.4	12.4				
Green Ext Time (p_c), s	0.1	2.5	0.2	5.9	0.1	1.3	0.1	6.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.0											
HCM 7th LOS	C											

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	413	2	5	431	0	1	0	2	0	0	0
Future Vol, veh/h	0	413	2	5	431	0	1	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	449	2	5	468	0	1	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	468	0	0	451	0	0	929	929	450
Stage 1	-	-	-	-	-	-	450	450	-
Stage 2	-	-	-	-	-	-	479	479	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1093	-	-	1109	-	-	297	267	609
Stage 1	-	-	-	-	-	-	642	572	-
Stage 2	-	-	-	-	-	-	623	555	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1093	-	-	1109	-	-	295	0	609
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	0	-
Stage 1	-	-	-	-	-	-	642	0	-
Stage 2	-	-	-	-	-	-	619	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.09	13.07
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	450	1093	-	-	21	-	-
HCM Lane V/C Ratio	0.007	-	-	-	0.005	-	-
HCM Control Delay (s/veh)	13.1	0	-	-	8.3	0	-
HCM Lane LOS	B	A	-	-	A	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	417	0	0	430	0	0	0	1	0	0	0
Future Vol, veh/h	0	417	0	0	430	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	453	0	0	467	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	453	0	0	687	921	453	921	921	234
Stage 1	-	-	-	-	-	-	453	453	-	467	467	-
Stage 2	-	-	-	-	-	-	234	467	-	453	453	-
Critical Hdwy	-	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	-	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	1106	-	0	347	270	606	238	270	769
Stage 1	0	-	-	-	-	0	585	569	-	546	561	-
Stage 2	0	-	-	-	-	0	749	561	-	585	569	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1106	-	-	347	270	606	238	270	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	347	270	-	238	270	-
Stage 1	-	-	-	-	-	-	585	569	-	546	561	-
Stage 2	-	-	-	-	-	-	749	561	-	584	569	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0			0			10.95			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	606	-	-	1106	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-	-
HCM Control Delay (s/veh)	11	-	-	0	-	0
HCM Lane LOS	B	-	-	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-

HCM 7th TWSC
13: MIDDLE SCHOOL & 204TH STREET SW

CPE & CPM

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖	↘	
Traffic Vol, veh/h	9	166	0	10	195	0
Future Vol, veh/h	9	166	0	10	195	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	180	0	11	212	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	190	0	21	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1384	-	996	1072
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1384	-	996	1072
Mov Cap-2 Maneuver	-	-	-	-	996	-
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	1012	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		9.59	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	996	-	-	1384	-	
HCM Lane V/C Ratio	0.213	-	-	-	-	
HCM Control Delay (s/veh)	9.6	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	W	
Traffic Vol, veh/h	175	0	0	205	20	0
Future Vol, veh/h	175	0	0	205	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	190	0	0	223	22	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	413	190
Stage 1	-	-	-	190	-
Stage 2	-	-	-	223	-
Critical Hdwy	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	595	852
Stage 1	-	0	0	842	-
Stage 2	-	0	0	814	-
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	-	-	-	595	852
Mov Cap-2 Maneuver	-	-	-	595	-
Stage 1	-	-	-	842	-
Stage 2	-	-	-	814	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	595	-	-
HCM Lane V/C Ratio	0.037	-	-
HCM Control Delay (s/veh)	11.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	286	217	58	427
Future Volume (vph)	286	217	58	427
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	10.0	10.0	10.0
Total Split (s)	45.0	30.0	30.0	30.0
Total Split (%)	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

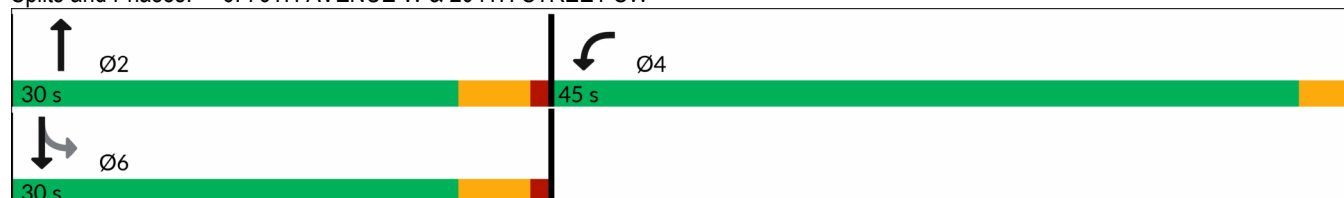
Cycle Length: 75

Actuated Cycle Length: 67.2

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	286	53	217	323	58	427
Future Volume (veh/h)	286	53	217	323	58	427
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.81		0.94	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1693	1693	1811	1811	1826	1826
Adj Flow Rate, veh/h	572	106	241	446	116	474
Peak Hour Factor	0.50	0.50	0.90	0.50	0.50	0.90
Percent Heavy Veh, %	14	14	6	6	5	5
Cap, veh/h	620	115	213	394	112	713
Arrive On Green	0.48	0.48	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1280	237	546	1010	737	1826
Grp Volume(v), veh/h	679	0	0	687	116	474
Grp Sat Flow(s),veh/h/ln	1519	0	0	1555	737	1826
Q Serve(g_s), s	26.7	0.0	0.0	25.0	0.0	13.7
Cycle Q Clear(g_c), s	26.7	0.0	0.0	25.0	25.0	13.7
Prop In Lane	0.84	0.16		0.65	1.00	
Lane Grp Cap(c), veh/h	737	0	0	607	112	713
V/C Ratio(X)	0.92	0.00	0.00	1.13	1.03	0.67
Avail Cap(c_a), veh/h	996	0	0	607	112	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	19.5	32.0	16.1
Incr Delay (d2), s/veh	11.0	0.0	0.0	78.5	93.7	4.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.5	0.0	0.0	31.1	8.3	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.4	0.0	0.0	98.0	125.7	20.9
LnGrp LOS	C			F	F	C
Approach Vol, veh/h	679		687			590
Approach Delay, s/veh	26.4		98.0			41.5
Approach LOS	C		F			D
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		34.0		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		42.0		25.0	
Max Q Clear Time (g_c+l1), s	27.0		28.7		27.0	
Green Ext Time (p_c), s	0.0		2.4		0.0	
Intersection Summary						
HCM 7th Control Delay, s/veh			56.1			
HCM 7th LOS			E			

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	286	217	58	427
Future Volume (vph)	286	217	58	427
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	10.0	10.0	10.0
Total Split (s)	45.0	30.0	30.0	30.0
Total Split (%)	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

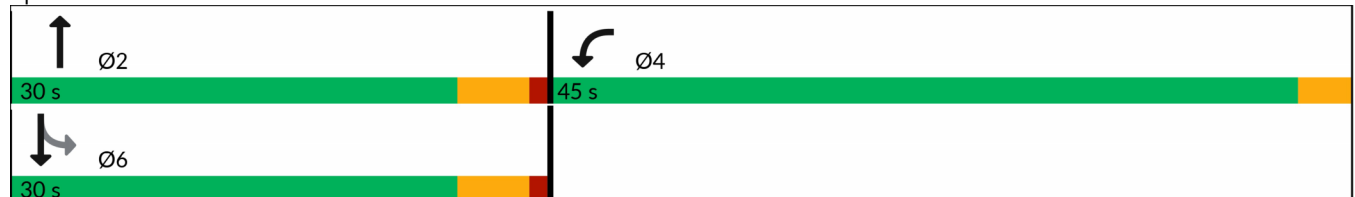
Cycle Length: 75

Actuated Cycle Length: 54.2

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	286	53	217	323	58	427
Future Volume (veh/h)	286	53	217	323	58	427
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.75		0.95	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1693	1693	1811	1811	1826	1826
Adj Flow Rate, veh/h	381	71	241	298	77	474
Peak Hour Factor	0.75	0.75	0.90	0.75	0.75	0.90
Percent Heavy Veh, %	14	14	6	6	5	5
Cap, veh/h	467	87	340	420	312	869
Arrive On Green	0.37	0.37	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1257	234	713	882	837	1826
Grp Volume(v), veh/h	453	0	0	539	77	474
Grp Sat Flow(s),veh/h/ln	1495	0	0	1596	837	1826
Q Serve(g_s), s	14.3	0.0	0.0	14.0	4.2	9.6
Cycle Q Clear(g_c), s	14.3	0.0	0.0	14.0	18.2	9.6
Prop In Lane	0.84	0.16		0.55	1.00	
Lane Grp Cap(c), veh/h	555	0	0	760	312	869
V/C Ratio(X)	0.82	0.00	0.00	0.71	0.25	0.55
Avail Cap(c_a), veh/h	1196	0	0	760	312	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	10.9	18.1	9.7
Incr Delay (d2), s/veh	3.0	0.0	0.0	5.5	1.9	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	0.0	0.0	8.7	1.6	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	17.9	0.0	0.0	16.4	20.0	12.2
LnGrp LOS	B			B	B	B
Approach Vol, veh/h	453		539			551
Approach Delay, s/veh	17.9		16.4			13.3
Approach LOS	B		B			B
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		22.5		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		42.0		25.0	
Max Q Clear Time (g_c+l1), s	16.0		16.3		20.2	
Green Ext Time (p_c), s	2.5		1.7		1.5	
Intersection Summary						
HCM 7th Control Delay, s/veh			15.7			
HCM 7th LOS			B			

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	188	547	24	405
Future Volume (vph)	188	547	24	405
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	24.5	10.0	10.0	10.0
Total Split (s)	45.0	30.0	30.0	30.0
Total Split (%)	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

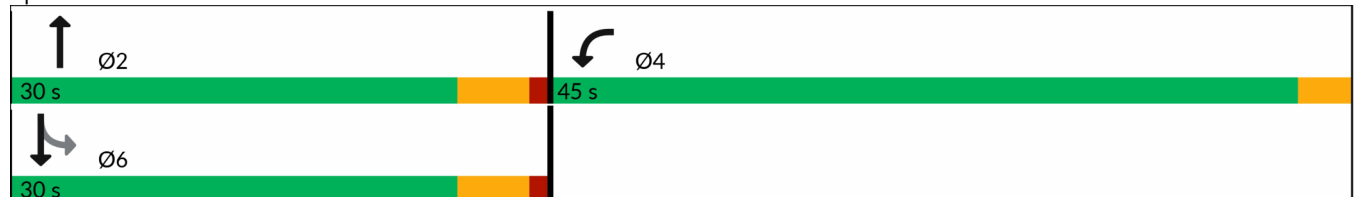
Cycle Length: 75

Actuated Cycle Length: 53

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	188	37	547	146	24	405
Future Volume (veh/h)	188	37	547	146	24	405
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.66		0.95	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1707	1707	1870	1870	1856	1856
Adj Flow Rate, veh/h	376	74	595	292	48	440
Peak Hour Factor	0.50	0.50	0.92	0.50	0.50	0.92
Percent Heavy Veh, %	13	13	2	2	3	3
Cap, veh/h	455	90	550	270	136	879
Arrive On Green	0.37	0.37	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1215	239	1162	570	619	1856
Grp Volume(v), veh/h	451	0	0	887	48	440
Grp Sat Flow(s),veh/h/ln	1458	0	0	1732	619	1856
Q Serve(g_s), s	14.8	0.0	0.0	25.0	0.0	8.6
Cycle Q Clear(g_c), s	14.8	0.0	0.0	25.0	25.0	8.6
Prop In Lane	0.83	0.16		0.33	1.00	
Lane Grp Cap(c), veh/h	546	0	0	821	136	879
V/C Ratio(X)	0.83	0.00	0.00	1.08	0.35	0.50
Avail Cap(c_a), veh/h	1160	0	0	821	136	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	13.9	26.4	9.6
Incr Delay (d2), s/veh	3.2	0.0	0.0	55.6	7.0	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.3	0.0	0.0	29.2	1.5	5.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.2	0.0	0.0	69.5	33.4	11.6
LnGrp LOS	B			F	C	B
Approach Vol, veh/h	451		887			488
Approach Delay, s/veh	18.2		69.5			13.8
Approach LOS	B		E			B
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		22.8		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		42.0		25.0	
Max Q Clear Time (g_c+l1), s	27.0		16.8		27.0	
Green Ext Time (p_c), s	0.0		1.7		0.0	
Intersection Summary						
HCM 7th Control Delay, s/veh			41.9			
HCM 7th LOS			D			

Timings

6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	188	547	24	405
Future Volume (vph)	188	547	24	405
Turn Type	Prot	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	24.5	10.0	10.0	10.0
Total Split (s)	45.0	30.0	30.0	30.0
Total Split (%)	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0
All-Red Time (s)	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Max	Max	Max

Intersection Summary

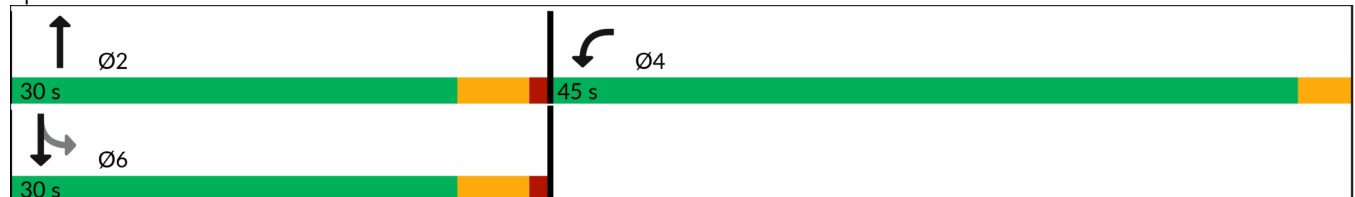
Cycle Length: 75

Actuated Cycle Length: 49

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Splits and Phases: 6: 76TH AVENUE W & 204TH STREET SW



HCM 7th Signalized Intersection Summary 6: 76TH AVENUE W & 204TH STREET SW

CPE & CPM (204th St Analysis)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	188	37	547	146	24	405
Future Volume (veh/h)	188	37	547	146	24	405
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	0.65		0.95	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1707	1707	1870	1870	1856	1856
Adj Flow Rate, veh/h	251	49	595	195	32	440
Peak Hour Factor	0.75	0.75	0.92	0.75	0.75	0.92
Percent Heavy Veh, %	13	13	2	2	3	3
Cap, veh/h	438	86	643	211	183	897
Arrive On Green	0.36	0.36	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1211	236	1330	436	677	1856
Grp Volume(v), veh/h	301	0	0	790	32	440
Grp Sat Flow(s),veh/h/ln	1452	0	0	1765	677	1856
Q Serve(g_s), s	8.6	0.0	0.0	21.6	2.4	8.3
Cycle Q Clear(g_c), s	8.6	0.0	0.0	21.6	24.0	8.3
Prop In Lane	0.83	0.16		0.25	1.00	
Lane Grp Cap(c), veh/h	525	0	0	854	183	897
V/C Ratio(X)	0.57	0.00	0.00	0.93	0.17	0.49
Avail Cap(c_a), veh/h	1180	0	0	854	183	897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	12.5	23.7	9.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	17.3	2.1	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	0.0	15.9	0.8	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.3	0.0	0.0	29.8	25.8	11.0
LnGrp LOS	B			C	C	B
Approach Vol, veh/h	301		790			472
Approach Delay, s/veh	14.3		29.8			12.0
Approach LOS	B		C			B
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	30.0		21.7		30.0	
Change Period (Y+Rc), s	5.0		3.0		5.0	
Max Green Setting (Gmax), s	25.0		42.0		25.0	
Max Q Clear Time (g_c+I1), s	23.6		10.6		26.0	
Green Ext Time (p_c), s	0.8		1.1		0.0	
Intersection Summary						
HCM 7th Control Delay, s/veh			21.4			
HCM 7th LOS			C			

APPENDIX E

QUEUING CALCULATIONS

Arrivals	187 / 20 min	λ	15	Service Rate (seconds)
Service	240 / 20 min	μ	3	Vehicles Served Simultaneously
Arrivals/Service	0.78	ρ		
Service Channels	1	c		

Equations Applicable

Probability of having zero vehicles in the system

$$P_0 = \left[\sum_{n=0}^{c-1} \frac{\rho^n}{n!} + \frac{\rho^c}{c! \left(1 - \frac{\rho}{c}\right)} \right]^{-1}$$

$$P_0 = 0.22$$

Expected Average Queue Length

$$E(m) = P_0 \frac{\rho^{c+1}}{c!} \frac{1}{\left(1 - \frac{\rho}{c}\right)^2}$$

$$E(m) = 2.75 \text{ Vehicles}$$

Expected Average Number in the system

$$E(n) = E(m) + \rho$$

$$E(n) = 3.53 \text{ Vehicles}$$

Expected Average Total Time

$$E(v) = \frac{E(n)}{\lambda}$$

$$E(v) = 0.02 \text{ Hour}$$

$$1.13 \text{ Minutes}$$

Expected Average Waiting Time

$$E(w) = E(v) - \frac{1}{\mu}$$

$$E(w) = 0.01 \text{ Hour}$$

$$0.88 \text{ Minutes}$$

Probability of having exactly n vehicles in the system

$$n = 11$$

$$P_n = P_0 \frac{\rho^n}{n!} \quad \text{for } n < c$$

$$P_n = 1.4\%$$

$$P_n = P_0 \frac{\rho^n}{c^{n-c} c!} \quad \text{for } n > c$$

Probability of having n or fewer vehicles = 95.0%

Probability of having more than n vehicles = 5.0%

Arrivals	187 / 20 min	λ	15	Service Rate (seconds)
Service	320 / 20 min	μ	4	Vehicles Served Simultaneously
Arrivals/Service	0.58	ρ		
Service Channels	1	c		

Equations Applicable

Probability of having zero vehicles in the system

$$P_0 = \left[\sum_{n=0}^{c-1} \frac{\rho^n}{n!} + \frac{\rho^c}{c! \left(1 - \frac{\rho}{c}\right)} \right]^{-1}$$

$$P_0 = 0.42$$

Expected Average Queue Length

$$E(m) = P_0 \frac{\rho^{c+1}}{c!} \frac{1}{\left(1 - \frac{\rho}{c}\right)^2}$$

$$E(m) = 0.82 \text{ Vehicles}$$

Expected Average Number in the system

$$E(n) = E(m) + \rho$$

$$E(n) = 1.41 \text{ Vehicles}$$

Expected Average Total Time

$$E(v) = \frac{E(n)}{\lambda}$$

$$E(v) = 0.01 \text{ Hour}$$

$$0.45 \text{ Minutes}$$

Expected Average Waiting Time

$$E(w) = E(v) - \frac{1}{\mu}$$

$$E(w) = 0.00 \text{ Hour}$$

$$0.26 \text{ Minutes}$$

Probability of having exactly n vehicles in the system

$n = 5$

$$P_n = P_0 \frac{\rho^n}{n!} \text{ for } n < c$$

$$P_n = 2.8\%$$

$$P_n = P_0 \frac{\rho^n}{c^{n-c} c!} \text{ for } n > c$$

Probability of having n or fewer vehicles = 96.0%

Probability of having more than n vehicles = 4.0%

M/M/C (Random Arrival, Random Service, and C Service Channel) - CPM

Arrivals	308 / 20 min	λ	15	Service Rate (seconds)
Service	400 / 20 min	μ	5	Vehicles Served Simultaneously
Arrivals/Service	0.77	ρ		
Service Channels	1	c		

Equations Applicable

Probability of having zero vehicles in the system

$$P_0 = \left[\sum_{n=0}^{c-1} \frac{\rho^n}{n!} + \frac{\rho^c}{c! \left(1 - \frac{\rho}{c}\right)} \right]^{-1}$$

$$P_0 = 0.23$$

Expected Average Queue Length

$$E(m) = P_0 \frac{\rho^{c+1}}{c! \left(1 - \frac{\rho}{c}\right)^2}$$

$$E(m) = 2.58 \text{ Vehicles}$$

Expected Average Number in the system

$$E(n) = E(m) + \rho$$

$$E(n) = 3.35 \text{ Vehicles}$$

Expected Average Total Time

$$E(v) = \frac{E(n)}{\lambda}$$

$$E(v) = 0.01 \text{ Hour}$$

$$0.65 \text{ Minutes}$$

Expected Average Waiting Time

$$E(w) = E(v) - \frac{1}{\mu}$$

$$E(w) = 0.01 \text{ Hour}$$

$$0.50 \text{ Minutes}$$

Probability of having exactly n vehicles in the system

$$n = 11$$

$$P_n = P_0 \frac{\rho^n}{n!} \quad \text{for } n < c$$

$$P_n = 1.3\%$$

$$P_n = P_0 \frac{\rho^n}{c^{n-c} c!} \quad \text{for } n > c$$

Probability of having n or fewer vehicles = 95.7%

Probability of having more than n vehicles = 4.3%

M/M/C (Random Arrival, Random Service, and C Service Channel) - CPM

Arrivals	308 / 20 min	λ	15	Service Rate (seconds)
Service	480 / 20 min	μ	6	Vehicles Served Simultaneously
Arrivals/Service	0.64	ρ		
Service Channels	1	c		

Equations Applicable

Probability of having zero vehicles in the system

$$P_0 = \left[\sum_{n=0}^{c-1} \frac{\rho^n}{n!} + \frac{\rho^c}{c! \left(1 - \frac{\rho}{c}\right)} \right]^{-1}$$

$$P_0 = 0.36$$

Expected Average Queue Length

$$E(m) = P_0 \frac{\rho^{c+1}}{c!} \frac{1}{\left(1 - \frac{\rho}{c}\right)^2}$$

$$E(m) = 1.15 \text{ Vehicles}$$

Expected Average Number in the system

$$E(n) = E(m) + \rho$$

$$E(n) = 1.79 \text{ Vehicles}$$

Expected Average Total Time

$$E(v) = \frac{E(n)}{\lambda}$$

$$E(v) = 0.01 \text{ Hour}$$

$$0.35 \text{ Minutes}$$

Expected Average Waiting Time

$$E(w) = E(v) - \frac{1}{\mu}$$

$$E(w) = 0.00 \text{ Hour}$$

$$0.22 \text{ Minutes}$$

Probability of having exactly n vehicles in the system

$n = 6$

$$P_n = P_0 \frac{\rho^n}{n!} \quad \text{for } n < c$$

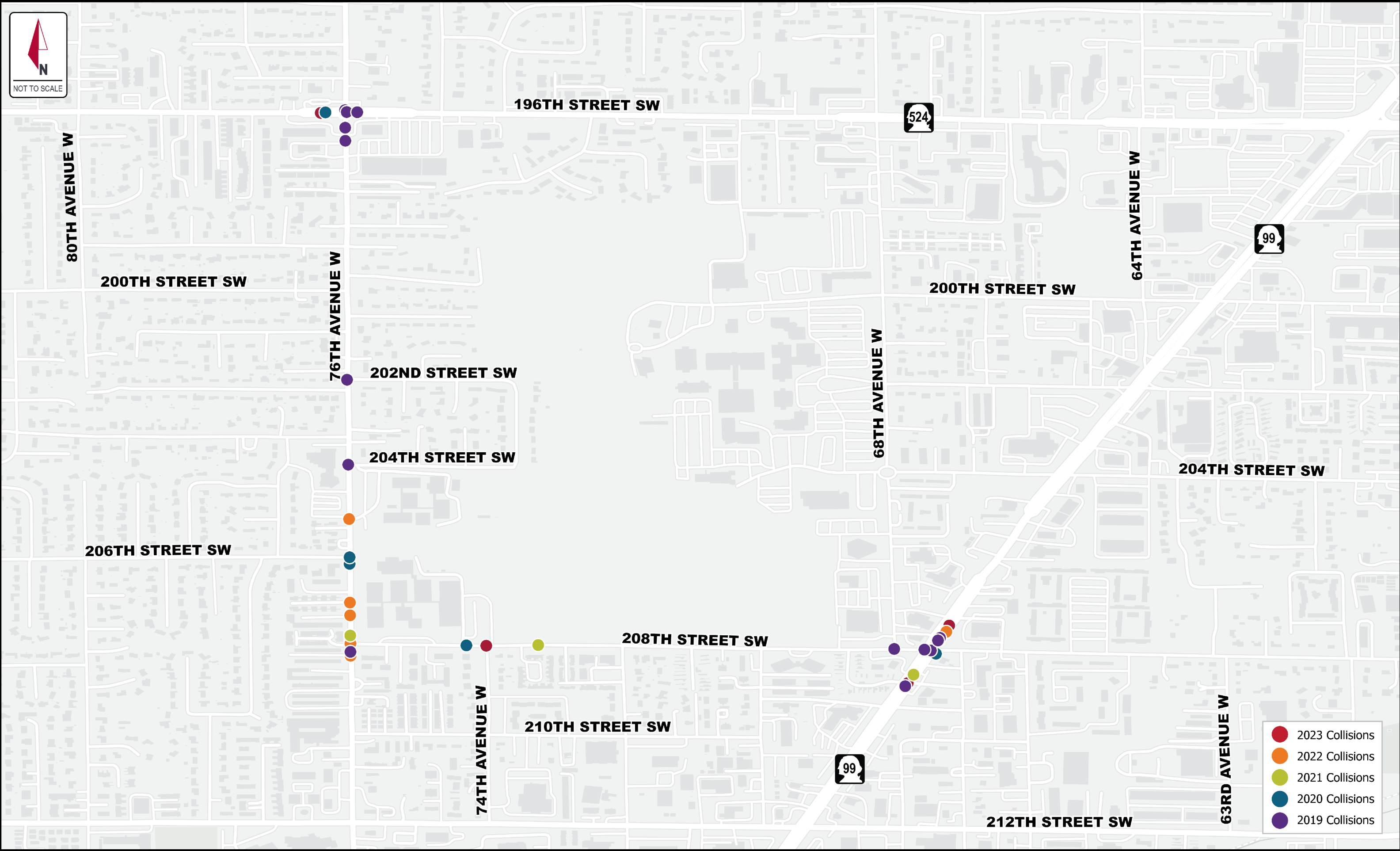
$$P_n = 2.5\%$$

$$P_n = P_0 \frac{\rho^n}{c^{n-c} c!} \quad \text{for } n > c$$

Probability of having n or fewer vehicles = 95.5%

Probability of having more than n vehicles = 4.5%

APPENDIX F
COLLISION DATA



Collision Data Table

College Place Elementary and Middle School - City of Lynnwood, WA

REPORT NUMBER	DATE	TIME	PRIMARY ROADWAY	CROSS STREET	SEVERITY	# VEHICLES	# PEDS	# BIKES	COLLISION TYPE	VEHICLE 1 MANEUVER	VEHICLE 2 MANEUVER
E926848	2019-05-21	13:44	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign
E973307	2019-10-19	17:29	99	208TH ST SW	Possible Injury	2	0	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing
EA19963	2020-02-27	22:03	99	208TH ST SW	Suspected Minor Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
EA44636	2020-07-01	21:26	99	208TH ST SW	No Apparent Injury	2	0	0	Entering at angle	Going Straight Ahead	Starting in Traffic Lane
EB19968	2021-04-06	13:20	99	208TH ST SW	Possible Injury	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead
EB48583	2021-07-14	6:20	99	208TH ST SW	Possible Injury	2	0	0	Entering at angle	Going Straight Ahead	Starting in Traffic Lane
EB90721	2021-08-05	23:25	99	208TH ST SW	No Apparent Injury	2	0	0	From opposite direction - one left turn - one right turn	Making Right Turn	Making Left Turn
EC04405	2021-12-24	14:05	99	208TH ST SW	No Apparent Injury	1	0	0	Utility Pole	Making Left Turn	N/A
EC42496	2022-05-01	21:16	99	208TH ST SW	No Apparent Injury	2	0	0	Same direction -- both turning right -- both moving -- sideswipe	Making Right Turn	Making Right Turn
EC82712	2022-09-02	11:56	99	208TH ST SW	No Apparent Injury	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn
ED03833	2022-10-29	1:03	99	208TH ST SW	No Apparent Injury	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead
ED19145	2022-12-21	6:20	99	208TH ST SW	Suspected Serious Injury	1	0	0	Signal Pole	Going Straight Ahead	N/A
ED74817	2023-06-20	18:02	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - sideswipe	Changing Lanes	Stopped at Signal or Stop Sign
ED87366	2023-08-02	14:13	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign
EE17592	2023-11-01	19:22	99	208TH ST SW	Suspected Minor Injury	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead
E880405	2019-01-04	13:53	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - all others	Backing	Stopped for Traffic
E903797	2019-03-20	7:37	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
E906901	2019-03-30	13:13	99	208TH ST SW	Possible Injury	4	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
E959050	2019-09-10	10:30	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped for Traffic
EB89271	2021-11-06	18:50	99	208TH ST SW	No Apparent Injury	3	0	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing
EC20036	2022-02-12	17:55	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing
EC40714	2022-04-22	11:55	99	208TH ST SW	Suspected Minor Injury	2	0	0	From same direction - both going straight - both moving - sideswipe	Going Straight Ahead	Changing Lanes
EC56817	2022-06-10	13:44	99	208TH ST SW	Possible Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
ED22400	2023-01-04	15:49	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
ED77921	2023-06-16	22:29	99	208TH ST SW	Suspected Minor Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
ED95997	2023-08-19	18:43	99	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
E901119	2019-02-20	20:57	524	76TH AVE W	No Apparent Injury	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead
E931843	2019-06-09	17:11	524	76TH AVE W	No Apparent Injury	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead
E936755	2019-06-30	15:04	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead
E973853	2019-10-16	6:32	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
E975753	2019-10-26	18:49	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn
E980864	2019-11-10	11:54	524	76TH AVE W	Possible Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
EA05623	2020-01-19	18:20	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Starting in Traffic Lane	Making Left Turn
EA19961	2020-01-28	20:08	524	76TH AVE W	Suspected Minor Injury	1	1	0	Vehicle turning left hits pedestrian	Making Left Turn	N/A
EA15436	2020-02-13	11:41	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
EA36430	2020-05-07	17:32	524	76TH AVE W	No Apparent Injury	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn
EA58844	2020-08-26	10:19	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Starting in Traffic Lane	Stopped for Traffic
EB25484	2021-04-10	20:52	524	76TH AVE W	No Apparent Injury	2	0	0	Entering at angle	Making Right Turn	Stopped at Signal or Stop Sign
EB36747	2021-05-29	14:10	524	76TH AVE W	Suspected Minor Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
EB43662	2021-06-19	12:28	524	76TH AVE W	Possible Injury	2	0	0	From opposite direction - one left turn - one right turn	Making Right Turn	Making Left Turn
EB49798	2021-07-15	15:11	524	76TH AVE W	Suspected Minor Injury	1	1	0	Vehicle turning left hits pedestrian	Making Right Turn	N/A
EB59445	2021-08-15	15:58	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
EB77198	2021-10-07	10:03	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - one right turn - one straight	Going Straight Ahead	Stopped for Traffic
EC20032	2022-02-10	10:34	524	76TH AVE W	No Apparent Injury	1	0	0	Signal Pole	Making Right Turn	N/A
ED05350	2022-10-31	18:11	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn
ED06617	2022-11-13	15:41	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
ED21922	2022-12-25	11:41	524	76TH AVE W	Suspected Serious Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
ED36505	2023-02-20	13:24	524	76TH AVE W	No Apparent Injury	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead
ED39944	2023-02-25	18:19	524	76TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one right turn	Making Right Turn	Making Left Turn
ED39953	2023-02-28	6:01	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - sideswipe	Going Straight Ahead	Stopped at Signal or Stop Sign
ED55110	2023-04-18	15:20	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EE21069	2023-11-18	18:00	524	76TH AVE W	Suspected Minor Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
E888245	2019-01-30	9:21	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EA17656	2020-02-20	14:35	524	76TH AVE W	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
ED39935	2023-03-04	15:44	524	76TH AVE W	Possible Injury	1	0	0	Building	Making Left Turn	N/A

Collision Data Table

College Place Elementary and Middle School - City of Lynnwood, WA

E979527	2019-11-06	9:15	202ND ST SW	76TH AVE W	Possible Injury	2	0	0	Entering at angle	Making Left Turn	Going Straight Ahead
EC91077	2022-09-24	21:28	208TH ST SW	68TH AVE W	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
EE20589	2023-11-16	14:46	208TH ST SW	74TH AVE W	Suspected Minor Injury	1	1	0	Vehicle turning left hits pedestrian	Making Left Turn	N/A
EC78406	2022-08-28	11:00	208TH ST SW	76TH AVE W	No Apparent Injury	2	0	0	Entering at angle	Making Left Turn	Stopped at Signal or Stop Sign
ED14005	2022-12-12	1:11	208TH ST SW	76TH AVE W	Unknown	1	0	0	Cable Barrier	Making Left Turn	N/A
EA07093	2020-01-15	14:45	208TH ST SW	N/A	No Apparent Injury	1	0	0	Fence	Going Straight Ahead	N/A
EB38060	2021-06-09	15:06	208TH ST SW	N/A	Possible Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped in Roadway
E911446	2019-04-08	9:56	68TH AVE W	208TH ST SW	No Apparent Injury	2	0	0	Entering at angle	Making Left Turn	Going Straight Ahead
EB29212	2021-05-09	23:08	68TH AVE W	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign
EB93683	2021-11-23	15:16	68TH AVE W	208TH ST SW	No Apparent Injury	4	0	0	From same direction - both going straight - one stopped - rear-end	Other*	Stopped at Signal or Stop Sign
EC00027	2021-12-08	15:25	68TH AVE W	208TH ST SW	Possible Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Going Straight Ahead
ED07135	2022-11-22	21:36	76TH AVE W	N/A	No Apparent Injury	2	0	0	Entering at angle	Backing	Going Straight Ahead
ED18683	2022-12-08	23:33	76TH AVE W	N/A	No Apparent Injury	1	0	0	Fence	Going Straight Ahead	N/A
EC91078	2022-09-26	17:15	76TH AVE W	206TH ST SW	No Apparent Injury	2	0	0	Entering at angle	Merging (Entering Traffic)	Making Left Turn
E954421	2019-08-27	18:43	76TH AVE W	204TH ST SW	Possible Injury	3	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EA89051	2020-12-12	14:00	76TH AVE W	206TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EC85490	2022-09-19	14:14	76TH AVE W	206TH ST SW	Possible Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EC22932	2022-02-24	9:35	76TH AVE W	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped at Signal or Stop Sign
ED56968	2023-04-28	18:12	76TH AVE W	208TH ST SW	No Apparent Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
ED80715	2023-07-11	10:57	76TH AVE W	208TH ST SW	Possible Injury	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead
E899799	2019-03-06	12:02	76TH AVE W	208TH ST SW	No Apparent Injury	4	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EA98722	2021-01-16	7:20	76TH AVE W	208TH ST SW	Possible Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
EB94794	2021-11-28	11:51	76TH AVE W	208TH ST SW	No Apparent Injury	2	0	0	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead
EC18577	2022-02-08	17:49	76TH AVE W	208TH ST SW	Possible Injury	4	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
E993262	2019-12-12	12:03	76TH AVE W	524	No Apparent Injury	3	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic
E998928	2019-12-26	16:30	76TH AVE W	524	No Apparent Injury	2	0	0	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead
EA18052	2020-02-24	15:40	76TH AVE W	N/A	No Apparent Injury	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic